

# **Beyond Bandwidth: The Business Case for Data Acceleration**

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Many companies justify an investment in data acceleration based on wide area network (WAN) bandwidth savings. While these can be significant, they are just one of many things worth considering when building a business case for this technology.

In addition, businesses must consider the broader gains of data acceleration, including the impact this technology has on business processes, strategic IT projects, and employee productivity. Data acceleration extends distances between locations, improves application and data transfer performance, and secures traffic in transit. As a result, the positive impact of data acceleration can be felt throughout an entire organization.

Silver Peak customers, for example, have done the following with our data acceleration software:

- Lower disaster recovery costs and minimize risk through better offsite data replication
- Reduce facility and staffing costs through data center consolidation and server / storage centralization
- Increase cloud performance and lower cloud usage costs
- Improve business processes
- Lower ongoing telco costs through better bandwidth utilization

Just as faster processors transformed the PC, data acceleration transforms the distributed business. Operations become more efficient, IT more agile, and top and bottom lines are improved with Silver Peak.

### Benefit #1 Reduce Disaster Recovery Costs and Minimize Risks through Better Data Replication.

Outages are very costly to most companies, whether due to floods, hurricanes, terrorist attacks or other unforeseen events. (See Figure 1). This is fueling the demand for more efficient and reliable off-site data replication.

But those responsible for data replication projects are often caught between a rock and a hard place. On the one hand, there is a growing amount of data and “mission critical” applications that must be protected across ever increasing distances. On the other hand, replication performance suffers as data volumes and distances increase.

#### Meet RPO

Data acceleration enables companies to overcome network obstacles to meet their Recovery Point Objectives (RPO). By increasing replication throughput, more data can be protected in less time. By extending distances, companies can minimize risk by replicating to farther locations.

The Prudential UK, for example, is able to replicate between Michigan and London using Silver Peak – a distance that was not possible without data acceleration. Oceanering reduced replication times from 180 hours to just 7 hours between Maryland and Texas, while Eagle Bank of Massachusetts slashed their replication times from 10 days to just over 5 hours.

What is the ROI of faster and farther data replication? The loss of 1 MB of data is valued at approximately \$10,000<sup>1</sup>. The average large enterprise (over a billion dollars in revenue) lost \$6 million from missing data in 2012<sup>2</sup>. Therefore, by helping IT avoid these losses, data acceleration can deliver a tremendous ROI.

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<sup>1</sup> “The Cost of Lost Data,” David M. Smith, *Graziado Business Review*, 2003 Volume 6, Issue 3,

<sup>2</sup> “The Real Cost of Data Loss”, K logix,

### Avoid regulatory penalties

Numerous government and industry regulations mandate strict guidelines for data preservation. The Securities and Exchange Commission, for example, fined five companies \$8.25 million for failure to back up e-mail correspondence<sup>3</sup>. Sarbanes Oxley fines can cost up to a million dollars and prison time. HIPAA violations<sup>4</sup> can reach up to \$1.5 million annually per organization.

By optimizing data protection, data acceleration ensures ongoing compliance. This helps companies avoid the possibility of stiff penalties, which can save substantial money (and legal headaches).

### Save on labor costs

Synchronization problems that occur during data backup and replication can consume many work-hours to diagnose and troubleshoot. Silver Peak's data acceleration technology eliminates these issues, letting IT managers re-allocate those hours to more strategic tasks, such as capacity planning. If a typical work-hour costs approximately \$50, then eliminating 20 hours/week in disaster recovery problems yields more than \$50,000 in annual savings.

### Save on equipment costs

By making remote replication reliable, organizations avoid the capital costs of running tape backup systems. This is a \$100,000 annual savings on average (\$8,780 a month) after factoring in the Linear Tape-Open (LTO) drive, cartridges, backup software licenses, management software, tape vaulting services, and administrative costs<sup>5</sup>.

Then there are the bandwidth savings that comes with more efficient offsite replication. By replicating more data using less bandwidth, organizations can avoid costly bandwidth upgrades. Petco, a leading specialty retailer, improved RecoverPoint replication over the WAN by over 70 percent, enabling the company to save \$100,000 annually by avoiding costly bandwidth upgrades.

## Benefit #2 Consolidate Data Centers without Impacting Application Performance

There are many reasons why organizations consolidate data centers. Rising environmental costs (power and cooling), expensive floor space, high staffing costs, and new energy efficiency laws are just some examples. It is estimated the average enterprise can reduce their staffing costs by a factor of 10 and facility costs by about \$300,000 a month for an average (Tier III) data center. Given these numbers, it is no surprise that data center consolidation is a top project in many organizations.

Data center consolidation can create a unique challenge, however. When a local data center is replaced with a remote one, users must traverse long distances to access their data and applications. This can result in poor application performance, which hurts employee productivity (and morale).

<sup>3</sup> <http://www.sec.gov/news/press/2002-173.htm>

<sup>4</sup> "HIPAA Violations and Enforcement", American Medical Association.

<sup>5</sup> "Is Cloud Backup Right for Your Servers?" The Gartner Group, November 29, 2012

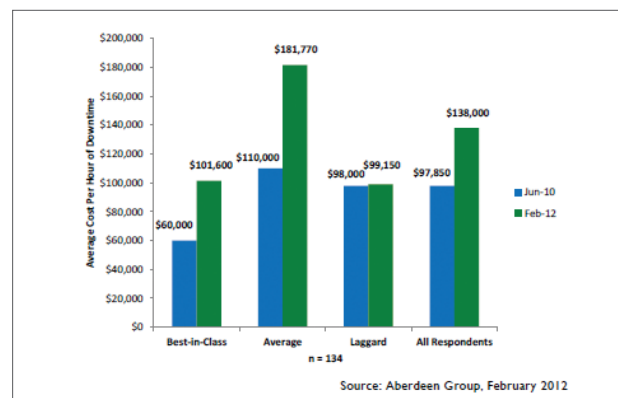


Figure 1: Time to Recover from Business Interruptions

Data acceleration ensures application performance does not suffer when users are far away from their data centers. Deduplication minimizes the amount of data transferred between locations; Network Acceleration eliminates the ill effects of latency; and by correcting packet loss and out-of-order packets in real-time, data acceleration improves network quality. The result: data centers can be located anywhere without hurting the end user experience.

Many Silver Peak customers have realized significant savings through data center consolidation, which would not have been possible without our data acceleration solution. Merial, an animal-health company, for example, used Silver Peak data acceleration to consolidate data center and slash facility costs by \$600,000 a year. Linklaters, a global law firm, saved \$1 million annually when consolidating four global data centers into two.

### Benefit #3: Centralize Servers and Storage without Impacting Remote User Performance

Servers and storage centralization can be very attractive to an IT organization. Hardware costs can drop substantially as organizations leverage the scale and price of commoditized server farms within a centralized data center. In addition, labor costs can drop when there no longer is a need for remote employees to manage distributed servers, or when travel to remote locations is substantially reduced.

These economics become ever more favorable with the adoption of virtualization. When workloads and virtual machines can be seamlessly moved between hosts within a data center or to an offsite location like the cloud, server utilization can improve by a third or more.

“All together, consolidating 300 servers onto 27 servers running VMware and 300 workloads with a 5 percent annual growth in workloads would result in a capital savings of \$432,000 over three years. Additional savings in power and cooling (\$533,000), networking equipment (\$212,000), rack space (\$160,000), labor (\$105,000) and more, results in a cumulative savings of \$3.9 million over three years.

Many Silver Peak customers have benefited from server and storage centralization. JOA, for example, saved \$60,000 in upfront costs by centralizing servers and storage. By implementing centralized Network Attached Storage (NAS), Charleston Area Medical Center saved \$20,000 per location in capital equipment costs plus an additional \$10,000 per location in recurring support expenditures. Neither of these centralization projects would have been possible without Silver Peak’s data acceleration software.

### Benefit #4: Increase cloud performance and lower cloud usage costs.

Whether using Infrastructure as a Service (IaaS) or Software as a Service (SaaS), the Cloud is gaining traction with many companies worldwide. Pushing workloads and infrastructure into the Cloud allows IT to reduce onsite IT resources while improving IT agility. Virtual instances can be easily and cost effectively spun up to address real-time demands for compute, storage or network resources.

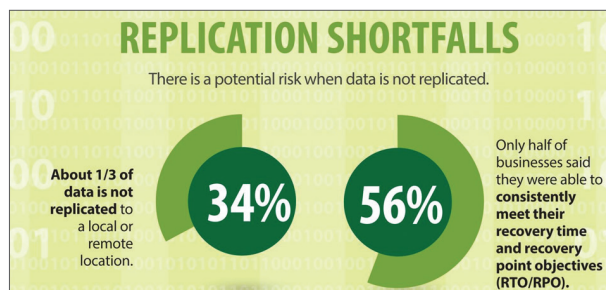


Figure 2: Many organizations are unable to protect all of the necessary data.

But moving to the cloud raises performance concerns, particularly for chatty applications or those where variability in performance is most noticeable. Because it is difficult to predict how close a user is to the nearest cloud point of presence, applications that are susceptible to latency (due to distance) are especially problematic when hosted in the cloud.

Data acceleration solutions - particularly data acceleration software – improve the performance of cloud-based applications. NCCW, an application service provider for the real-estate market, delivers hosted applications to more than 10,000 managed properties. With Silver Peak data acceleration, NCCW has improved the performance of HTTP traffic over the WAN by more than 80 percent and Enterprise Resource Planning (ERP) traffic by more than 60 percent. Autodesk, another Silver Peak customer, is seeing a 75 percent performance improvement when accessing Exchange servers hosted in Microsoft’s cloud.

Data acceleration can also provide substantial bandwidth savings when cloud providers charge for bandwidth usage. For example, a large company might spend more than \$30,000 per month pulling data out of Amazon EC2<sup>7</sup>. If Silver Peak software eliminates 80 percent of this traffic using deduplication, the organization can save \$24,000 every month.

### Benefit #5: Enable Business Processes Improvements.

Business processes improvements can revitalize the way organizations work, but what may sound good in the boardroom often requires data acceleration in the field. The new application that was supposed to enable the CEO to track global sales is too slow for the salesperson in the branch office. The workflow that was to shorten design times is unused when engineers give up due to agonizingly slow file transfers.

Data acceleration eliminates these application and protocol deficiencies, enabling organization to reap the full benefits of their efforts, often at a small fraction of the overall project cost. Microsoft Source Depot, for example, is using Silver Peak data acceleration to shorten turnarounds on nightly builds, improving bug detection and resolution, shortening product completion, and ultimately improving the bottom line. Aramex, a leading logistics company, reduced replication times from 24 hours to under 15 minutes with Silver Peak. This has enabled them to attain new contracts with companies that have stiff data protection requirements.

The opposite is also true. Failed business-critical applications have a significant impact on corporate profitability. Nike, for example, blamed problems involving a new set of supply-chain management applications for an expected profit shortfall. Similarly, Disney endured \$878 million write-offs due to unproductive software investments, and Gateway disposed of \$143 million worth of application investments. Would these project have been successful if they were using data acceleration?

### Benefit #6 Reduce Bandwidth Expenditures.

In some instances, substantial bandwidth savings alone can justify an investment in data acceleration. This is usually achieved by delaying or avoiding bandwidth upgrades, or by moving to a lower cost shared WAN services.

#### Business Benefits

How will data acceleration benefit your organization? Here are some of the ways.

##### Sample Savings\*

##### Replication

Cost of lost data (MB; Lost Record)	\$10,000; \$250
Penalties avoided	<\$1,500,000
Labor savings	\$50,000
Capital savings	\$100,000

##### Data Center Consolidation

Staffing (non technical)	\$2,500,000
Facility costs	\$4,300,000

##### The Cloud

Bandwidth	\$288,000
Ensure Project Delivery	Not Applicable

##### Server Consolidation

Capital savings	\$144,000
Power & Cooling	\$533,000
Networking Equipment	\$212,000
Rack Space	\$160,000
Labor costs	\$105,000

##### Business Process Improvements

Improved Efficiencies	Unquantifiable
Cost Reductions	Unquantifiable
New Clients	Unquantifiable

##### Bandwidth Savings

Bandwidth Upgrades	\$20,000
Lower Cost WANs	\$24,000

\*Annually per site, unless otherwise noted; assumptions detailed in the paper.

<sup>7</sup> Amazon EC2 Bandwidth pricing as of February 13, 2013.

### **Avoid or Delay bandwidth upgrades**

By eliminating over 95 percent of WAN traffic and by enforcing service quality, data acceleration software enables organizations to use less WAN bandwidth, helping them to avoid or delay bandwidth upgrades.

For example, you could save over \$20,000 per site annually by accelerating a 10 Mbps MPLS connection between Los Angeles and New York (about \$300 per port per month<sup>8</sup>) instead of upgrading to 100 Mbps MPLS port (about \$2,100 per month). And since data acceleration enforces QoS, IT need not purchase additional bandwidth for peak traffic conditions across all applications – saving even more on bandwidth charges.

Merial, a Silver Peak customer, saves \$2 million a year in bandwidth charges. CapGemini saves \$12,000 a month with Silver Peak by eliminating 75 percent of the data on its WAN. Baptist Health avoided spending \$500,000 a year when Silver Peak improved the efficiency of its OC-3 line. Similarly, SoundTransit saves \$100,000 in recurring WAN costs with Silver Peak data acceleration.

### **Move to lower cost shared WANs**

Shared WANs, like MPLS, Internet VPNS and cloud are more cost effective than private dedicated networks. But this comes at a price. MPLS and Internet VPNs are prone to congestion, which creates packet delivery issues. These, in turn, can hurt application performance.

By correcting network quality issues, like dropped and out of order packets, data acceleration enables organizations to use less expensive shared WAN services and by leveraging quality of service (QoS) resulting in substantial cost savings. For example, replacing an STM-1 /OC-3 (155 Mbps) between New York and LA with a 100 Mbps MPLS circuit would save nearly \$2,000 a month<sup>9</sup>.

NYK Logistics (now Yusen logistics) used Silver Peak to meet its four hour RPO and save \$200,000 annually by replicating across the Internet. Toshiba was able to move expensive private lines to an MPLS network once Silver Peak eliminated the packet loss, increasing throughput for NetApp SnapVault and other application.

### **ROI Considerations**

There is no doubt that data acceleration brings various business benefits, as described above. But the return on investment (ROI) for individual data acceleration solutions will vary based on numerous criteria. Organizations need to look at functionality, cost, scalability, and suitability when doing a detailed ROI analysis.

### **Functionality**

Data acceleration solutions should be able to extend distance between location by correcting latency, improving quality by fixing congestion and packet loss, and increasing bandwidth by eliminating redundant data from traversing site-to-site connections. While all data acceleration solution can reduce latency and bandwidth to varying degrees, only Silver Peak data acceleration improves network quality in real-time, allowing organizations to run mission critical applications even over less expensive Internet VPNS, cloud, or MPLS services.

### **Cost**

Virtual data acceleration software is less expensive to purchase than hardware appliances in large part because virtual software leverages the costs of commoditized server hardware. Comparisons have shown that the capital costs of a virtual solution can be as much as 70 percent lower than comparable hardware solutions<sup>10</sup>. Multiple virtual software packages can coexist on common server hardware, further lowering hardware costs per package.

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<sup>8</sup> MPLS pricing information provided by [MPLS Experts](#).

<sup>9</sup> STM-1/OC-3 pricing provided by [TeleGeography](#)

Pricing with virtual software is also more flexible. Silver Peak, for example, lets organizations purchase data acceleration outright as a capital expense or as a subscription service.

Operationally, Silver Peak's virtual software is easier and less expensive to deploy and manage than competing hardware solutions. Deployment happens in a few hours and can occur remotely.

### Scalability

Device scalability lowers investment costs. In addition, a scalable solution consumes less power and rack space, and is often easier to manage than multiple smaller devices.

Silver Peak is the leader in scalable data acceleration. We offer the most WAN and LAN throughput per device, as well as the most simultaneous sessions/connections. This ensures that Silver Peak delivers the best ROI, especially in large networks.

### Suitability

When calculating the ROI for data acceleration, one must amortize investment costs across the number of applications being optimized. The more applications accelerated, the better the return on the appliance.

Data acceleration solutions that are limited to accelerating just bulk TCP-based applications, such as CIFS and HTTP, and real-time TCP protocols, such as Microsoft RDP and Oracle, will deliver an inferior return that a solution that optimizes all IP traffic (like Silver Peak).

### The Silver Peak Solution

Silver Peak delivers the best ROI for data acceleration, leading the industry in scale, flexibility, and cost. Our software delivers the best performance across the most applications, making Silver Peak strategic to your most important IT initiatives. From data center consolidation and cloud to server and storage centralization, Silver Peak's data acceleration means business.

To learn more, visit our website at [www.silver-peak.com](http://www.silver-peak.com).

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*10 "Down with Hardware: Calculating Cost Savings of Software Infrastructure", WANSpeak, Dave Greenfield*