

WHITE PAPER

Adding Business Value with Wide-Area Data Services

Sponsored by: Riverbed Technology

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EXECUTIVE SUMMARY

With the growing importance of anywhere, anytime access for an increasingly dispersed workforce, IT managers are continually looking for ways to accelerate application performance across the wide area network (WAN).

Point products are available to improve one or another aspect of WAN performance, such as insufficient or congested bandwidth, impaired application performance, slow remote backup and replication, or obstacles to IT consolidation. However, IT managers would like a comprehensive wide-area solution that addresses all of these problems, so that users can enjoy LAN-like access to important data and applications regardless of their location.

One company that is offering the benefits of wide-area data services (WDS) is Riverbed, whose product line, the Steelhead family of appliances, optimizes TCP/IP traffic and provides further application optimization to make it easier for organizations to accelerate the most important applications for users anywhere in the world. By accelerating application performance and reducing bandwidth utilization, the Riverbed WDS solution is designed not only to improve application performance, but also to expedite the consolidation of IT infrastructure and enable faster network-based backup.

The Riverbed Steelhead appliances increase user productivity by speeding the performance of applications between distributed sites and between remote offices and enterprise datacenters, allowing faster access to centrally located applications and facilitating collaboration within a distributed workforce. The appliances also have a number of features designed to optimize the work of IT.

To validate and determine the business benefits of WDS, IDC interviewed IT managers at 12 companies of different sizes in a variety of industries that had deployed Riverbed's WDS solution. IDC asked detailed questions about the deployment and support costs and the savings achieved and then applied our proprietary ROI methodology to the results to determine the average ROI and payback period that the surveyed companies realized from deploying the Riverbed solution.

On average, the surveyed companies achieved IT budget savings of \$46,719 per 100 users in hardware, software, and bandwidth costs, while IT operations costs reductions contributed a further savings of \$661 per 100 users.

IDC found that improved user productivity accounted for the greatest benefits from deploying the Riverbed Steelhead appliances. On average, users increased their productive time by 7.4%, saving 10.6 hours annually. These savings averaged \$102,741 per 100 users per year.

After deploying Riverbed Steelhead appliances, the companies were able to increase the number of users supported by each IT full-time employee by 5%. This resulted in average savings of \$4,848 per 100 users over three years.

Additionally, companies benefited from the ability to grow revenue through previously impossible business strategies and to pursue new projects that could be geographically dispersed, as well as the ability to share work more effectively across offices around the world. This revenue growth averaged \$3,219 per 100 users over three years, resulting in average total benefits from the deployment of \$157,889 per 100 users over three years (see Table 1). From these benefits, IDC deducts the opportunity cost of not having the initial investment in some other instrument yielding 12%. For the surveyed companies, this results in a net present value (NPV) of the benefits of \$103,321 per 100 users.

TABLE 1

ROI Analysis for Deploying the Riverbed WDS Solution

| Metric | Average |
|--|------------|
| Three-year savings and revenue benefits* | \$157,889 |
| Three-year cost of investment* | \$21,360 |
| Net present value of benefits* | \$103,321 |
| Payback period | 7.3 months |
| Three-year ROI | 484% |

* Per 100 users

Source: IDC, 2007

Based on the average investment of \$21,360 per 100 users, the payback period from deploying the Riverbed solution averaged 7.3 months for the companies surveyed, yielding an average ROI of 484%.

MEETING BUSINESS REQUIREMENTS WITH THE NETWORK INFRASTRUCTURE

Top of mind for the CEO today is to drive improvements that increase revenue, such as customer service enhancements and product innovation. Additionally, there is an ever-present need to respond to regulatory concerns of the business. IT managers are expected to play a role in these areas, in addition to increasing efficiency and responsiveness within the IT organization.

Viewed from the perspective of today's business reality, the very nature of the network infrastructure has undergone a profound change. End users of IT systems are increasingly distributed throughout the organization. Employees are increasingly spending at least a portion of their working hours away from headquarters. At the end of 2006, the number of mobile workers reached 750 million worldwide. It wasn't that long ago when they were sitting in headquarters in close proximity to the systems running back-office applications. Today, end users are increasingly mobile, often on the road visiting customers. Globalization has also spread end users across the far reaches of the world. Now businesses employ workers close to the client or wherever the best available talent may be — regardless of location. Additionally, end users aren't just employees anymore, but customers, business partners, and suppliers. This new extended enterprise brings with it new challenges, such as ensuring security, optimum service levels, and data protection at all points throughout the network infrastructure.

New Applications to Drive Global Businesses

Enterprise IT professionals are delivering centrally located and managed applications on a global scale. New online applications representing critical business processes are now enabled for the Web while many existing applications need to be extended consistently on a global basis. The applications include:

- Financial and business applications, such as enterprise resource planning and customer relationship management
- Web applications such as voice over IP (VoIP)
- Content management for product life-cycle management and rich content

Additionally, many companies are considering adopting the online software-as-a-service model to quickly introduce new functionality to the organization. IT wants to realize the benefits of these new applications without the downside of slow, unreliable, and unpredictable application response times, which could slow user adoption and reduce user satisfaction and productivity.

To accurately demonstrate value to the enterprise, IT must commit to, and deliver on, these new applications at established service levels. End users expect predictable and fast application response times on a 24 x 7 basis. This is problematic in many cases because the vast majority of applications were developed to run in a LAN environment. They are not suited for the latency and relatively low bandwidth of wide area networks.

In addition to Web applications, many organizations are interested in deploying new VoIP and unified communication applications to provide a time-to-market differentiator and other benefits. Despite the widespread availability of broadband services, many of the new applications push the boundaries of available bandwidth. Faced with this burst in network traffic, IT managers are grappling with enabling the efficient deployment of bandwidth-hungry applications while limiting the effect of inappropriate content from the network. Additionally, knowing that more bandwidth-intensive applications loom in the future, they are looking to reduce or delay the need to purchase high-bandwidth services.

Finally, organizations need to make "old" applications work in new environments. Consider file sharing and document management: Over the past two decades, employees at major locations became increasingly reliant on these applications to do their jobs. However, it's only been in the past three years that performance has improved enough for organizations to consider using these "new" versions of existing applications consistently and reliably on a global scale.

Branch Office IT Centralization

One way for IT to meet the dual demands of reducing costs and being responsive to the business is to focus on branch operations. Many organizations are embarking on efforts to both consolidate IT infrastructure and centralize assets back into the datacenter. In the branch environment, the line-of-business manager is seeking to do the following:

- Provide a consistent end-customer experience at the branch office
- Meet regulatory demands of the industry

Organizations are using the datacenter as a robust asset that supports a consistent, secure end-user environment. By reducing or limiting servers and storage at the branch, IT has consistent control of branch office data and can more efficiently manage IT support for the branch.

IT can also find cost reduction opportunities at the branch. Reducing the complexity of IT assets deployed in any part of the organization has cascading benefits for cost reduction. Deploying a consistent set of functionality at all remote office branches reduces time and costs in managing and administering each individual office. Organizations with many remote offices can also benefit from volume purchasing. However, the ability to centralize IT assets back into the datacenter without disrupting performance at the branch is predicated on appropriate bandwidth and network services for each branch office.

Enhancing Data Protection in the Extended Enterprise

For many organizations, the deployment of servers and storage systems at numerous remote sites is both an administrative and a security nightmare. Key challenges posed by these distributed systems include:

- Deploying and managing backup software and systems (e.g., tape drives and tape media) in widely dispersed locations
- Implementing media management policies for both onsite and offsite storage of backup tapes that often require the use of third-party transportation and vaulting companies, thereby increasing the risk of lost or misused data
- Monitoring success/failure rates on remote backup processes and undertaking complex data/application recovery procedures, where local IT expertise is limited or nonexistent
- Supporting business continuity plans with datacenter replication, where bandwidth may be limited or cost prohibitive

In conversations with companies around the world, IDC hears many IT executives clearly acknowledge that existing data protection solutions and processes cannot meet the challenges they face. They continue to expand globally and must respond to changing expectations about application availability and information security. They need solutions that better help them meet these challenges.

What are the key characteristics that companies require in such solutions? At the most basic level, such a solution must:

- Leverage existing systems and facilities (e.g., WAN links) without requiring major redesigns or upgrades to installed systems
- Reduce the time and resources required for local and remote backup, while also eliminating backup windows and reducing failed backups/recoveries
- Support the installed server environments (e.g., Windows, Unix, and Linux) and application types (e.g., files, email, and databases) that companies typically deploy on departmental systems or in remote offices

Beyond these basic functions, to meet the evolving regulatory and governance needs of companies, a solution must:

- Scale to meet expanding numbers of systems, applications, and sites, while actually reducing backup times and shortening recovery times across all locations
- Ensure the integrity and security of the backed-up data while in transit and at any central data storage facility
- Provide a centralized system for setting policies for backups, transfers, and recoveries as well as systems to monitor compliance with these policies

RIVERBED TECHNOLOGY'S INTEGRATED WIDE-AREA DATA SERVICES SOLUTION

One company that is offering the benefits of wide-area data services is Riverbed, whose product line, the Steelhead product family, ranges in size to satisfy IT environments from small offices through large multisite datacenters. The appliances significantly reduce the amount of data sent across the WAN, optimize TCP/IP traffic, and also provide further application optimization for MS Windows, Exchange, HTTP, HTTPS, NFS, and MS SQL environments. These products come in either desktop form factors or 1U and 3U rackmount systems. The high end of the line is the Steelhead 6020, which supports up to two OC-3 WAN connections (310Mbps) of optimized WAN traffic. Riverbed also enables enterprises to cluster Steelhead appliances in datacenters through its Interceptor appliances, which scale up to 4Gbps, with support for up to 1 million simultaneous TCP/IP connections. In developing its solutions, Riverbed focuses on these four major areas:

- ☒ Streamlining of data by removing redundant data and prioritizing traffic through advanced quality of service (QoS) mechanisms
- ☒ Transport streamlining by improving the behavior of TCP/IP
- ☒ Application streamlining by reducing protocol inefficiencies
- ☒ Management streamlining through simplified appliance deployment, maintenance, and operational management

Technical Benefits of the WDS Solution

All appliances come with the Riverbed Optimization System (RiOS), which takes an integrated approach that simultaneously addresses the network, storage, and application elements of performance. Riverbed products are designed to automatically accelerate all applications that run over TCP. RiOS also provides application-specific optimizations for applications such as file sharing, email, database, Web HTTP, and HTTPS. Riverbed utilizes a combination of data reduction and packet roundtrip minimization to facilitate faster application performance: Data Streamlining removes most redundancy from WAN traffic running over TCP; Transport Streamlining typically eliminates packet roundtrips at the TCP layer; and Application Streamlining eliminates packet roundtrips at the application layer.

Strategic Business Impact

While all networking technologies are critical components of an IT infrastructure, WDS technology has a direct impact on the business. Customers across the board reported that by implementing Riverbed WDS technology, their businesses were able to take advantage of their network infrastructure in new ways that simultaneously enabled them to become more responsive to their customers and cut operational costs and time to market. Examples included the following:

- ☒ **Geographic expansion.** Rapid entry into new markets through organic expansion or acquisition is a critical business requirement. WDS technology can increase the speed of getting a new office up and running. Instead of deploying local servers and a large amount of bandwidth with onsite IT staff, a location can be enabled with a limited set of IT skills and infrastructure. Also, with the Riverbed solutions, customers reported the ability to deliver the newest applications to any user around the globe in a cost-effective manner, speeding time to market in new markets and for new applications. In many international locations, bandwidth costs make delivering new bandwidth-intensive applications prohibitively expensive, thereby limiting the pace of expansion.
- ☒ **Restructuring the business to be closer to the customer.** One customer reported: "One of the things that we're doing is we're restructuring to move our resources closer to our customers. And in order for that to be successful, we needed to be ahead of the curve in the technology. ... It gives our organization the ability to respond to our customers in a much quicker manner. If our customers are located in and around location A, and we've got an office in location A, then our customers are able to meet their need quicker."
- ☒ **Bandwidth upgrade savings.** The use of Riverbed WDS enabled customers to avoid the cost of upgrading to higher-bandwidth, and more costly, telecommunications services. One customer reported that "international locations have very limited bandwidth. It costs a lot of money when you jump from one bandwidth to the next available bandwidth. And with (Riverbed) we avoid doing that. ... So, in other words, if you're sitting at a T3, you don't have to go to an OC-3. If you're sitting at an OC-3, you don't have to go to a Gig E or an OC-48."
- ☒ **Working within bandwidth limitations.** Whether it is the inability to upgrade bandwidth at a few locations or just the sheer amount of applications needed, there is a constant concern for managing bandwidth. By accelerating application performance and reducing bandwidth utilization, the WDS solution enables the delivery of applications despite bandwidth limitations. The magnitude of the change is significant enough to change the end-user experience and also the nature in which they work. A customer reported to IDC: "Let's talk about user experience. You put this thing in and you change this guy's time to open a file from 60 minutes to 60 seconds ... and people notice. People do more cross-office work."

- ☒ **Data protection and regulatory requirements.** Customers reported that by implementing the Riverbed appliance, they are able to handle data protection in a completely different way. Instead of having to risk the loss of tapes with physical transportation to a backup facility, they can automate the process over the wide area. Not only does it save time, but it brings a new level of protection to sensitive company information. When asked about the liability of stolen data, one customer reported simply: "Yes, with Riverbed we eliminated that concern."
- ☒ **IT operational efficiency.** In addition to seeking to reduce costs and drive new revenue, organizations use the Riverbed WDS solution to enable operational efficiency. Reducing calls to the IT help desk is a very concrete benefit to the IT organization in multiple ways. As one large multinational corporation reported: "It's had a big impact, especially on IT, because the amount of screaming out in this region is almost nonexistent now, whereas the decibel levels were pretty high a year or two ago."

Productivity Impact in Detail

Many of the strategic business benefits described above are a result of enabling all employees in an organization to take advantage of key enterprise applications in ways they previously considered impossible. WDS solutions like Riverbed's actually enable both the end user and the IT manager to work in faster, more effective ways:

- ☒ **User productivity.** The Riverbed appliances increase user productivity by speeding the performance of applications between distributed sites and between remote offices and enterprise datacenters, allowing faster access to centrally located applications and facilitating collaboration within a distributed workforce. Besides addressing bandwidth constraints, the Riverbed appliances improve TCP behavior in high-latency networks and correct inefficiencies in the applications themselves. The appliances optimize traffic in both directions, transparent to the applications, users, and routing infrastructure.
- ☒ **IT labor optimization.** The Riverbed Steelhead appliances have a number of features to optimize the work of IT staff. Steelhead appliances are designed to be deployed quickly and easily. Once deployed, the appliances can use auto-discovery to automatically find all other Steelhead appliances on the network, avoiding the tedious tunnel configurations often required by other products. The appliances do not require any client or server reconfiguration in standard deployment mode, and there is no need for proxy configuration or adjusting of routing tables. The appliances support existing QoS schemes or can implement their own. Each Steelhead appliance can be managed through a rich GUI, Central Management Console, or command-line interface, which allows appliances to be set up, configured, and managed remotely. The appliances can report traffic and network optimization and segment reports by port, protocol, or IP address range. They can also provide full visibility through the support of NetFlow reporting.

DETERMINING THE BUSINESS BENEFITS OF WIDE-AREA DATA SERVICES

To validate and determine the business benefits of WDS, IDC interviewed enterprises around the world that are using Riverbed appliances. After asking detailed questions about the deployment and support costs and the savings achieved, IDC applied our proprietary ROI methodology to the results to determine the average ROI and payback period that the surveyed companies realized from deploying the Riverbed solution.

IDC's ROI Methodology

IDC's ROI methodology uses a three-step process to calculate the ROI and payback period:

1. Ascertain the investment made in deploying the solution and the associated training and support costs.
2. Measure the savings from improved IT efficiency and user productivity from deploying the solution and the cost savings from reduced spending on hardware, software, bandwidth, maintenance, and IT support.
3. Project the costs and savings over a three-year period and calculate the ROI and payback for the deployed solution.

Investment

To get an accurate assessment of the investment in deploying the Riverbed solution, IDC asked for the purchase and installation costs as well as the total cost of any required maintenance and training. The investment also includes the loaded costs of the incremental staff required to support the deployment.

Savings and Increased Revenue

To determine improvements in IT efficiency and the associated cost savings, IDC asked questions about the average loaded IT labor salaries and the time spent on IT tasks before and after the deployment. IDC also asked about cost savings from improved user productivity due to faster response times. Other questions focus on cost savings from reduced spending on hardware and software, bandwidth, maintenance, and IT support. Metrics are defined as follows:

- ☒ **IT efficiency** is a measure of how productively IT staff use their time. To remain competitive, companies must be able to grow their systems and networks at a faster rate than the IT staff required to support them. By reducing the time IT staff spend on routine, nonproductive tasks, IT managers reduce operating costs and free up staff to implement new initiatives more rapidly, helping to create a competitive edge. Skilled IT professionals continue to be scarce, so companies expect existing staff to take on more work and responsibilities. If IT departments are unable to achieve the required economies of scale and take on the more productive tasks, they restrain corporate managers' business decisions and discourage aggressive deployment of technology to gain a competitive advantage.

- ☒ **User productivity** is a measure of how productively users spend their time in doing their jobs properly. User productivity suffers with disruptions and delays in accessing and using applications or in collaborating with colleagues. User productivity may also suffer when employees have to wait for help desk support or other IT administrative tasks.
- ☒ **Cost savings** may accrue from reduced spending on hardware and software; the elimination of previous components, systems, and software no longer needed; avoiding or delaying network upgrades; and reduced need for maintenance and IT support. Other savings may flow from consolidation of distributed IT infrastructure and faster network-based backup.
- ☒ **Increased revenue** may arise from improved application performance and better collaboration, resulting in faster time to market and additional sales.

Calculation of ROI and Payback Period

IDC uses the net present value of the savings and increased revenue over three years in calculating the ROI and payback period for the deployment. The NPV of the savings is determined by subtracting the amount that would have been earned by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost.

IDC bases our calculations on a number of assumptions:

- ☒ To quantify savings from IT efficiency, IDC multiplies time values by burdened salary (salary + 40% for benefits and overhead).
- ☒ Because the full benefits of the solution are not available during the deployment period, IDC prorates the benefits on a monthly basis and subtracts the appropriate amount for the deployment time from the first-year savings.

Survey Demographics

For our survey, IDC interviewed IT managers at 12 companies of different sizes in a variety of industries that had deployed Riverbed's WDS solution. To obtain specific figures for savings and costs, IDC asked a series of questions about Riverbed deployment and support costs and the associated time and staffing requirements for users and IT staff before and after the deployment.

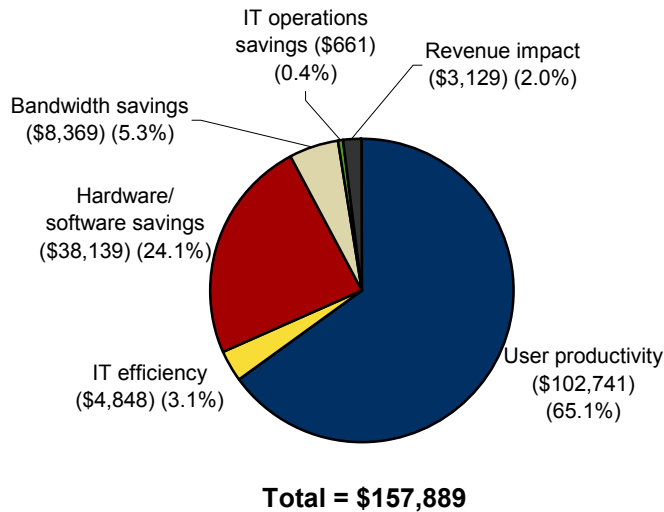
Survey Results

IDC's survey focused on productivity gains as well as the cost savings and other benefits of wide-area data services made possible by the Riverbed appliances. From the results of the interviews, IDC was able to determine the average ROI and payback period that the surveyed companies had realized from deploying the appliances, based on increases in user productivity and IT labor optimization, other cost savings, and increased revenue.

Figure 1 presents the overall average savings per 100 users over the three-year period.

FIGURE 1

Average Three-Year Savings per 100 Users from Deploying the Riverbed WDS Solution



Source: IDC, 2007

User Productivity

In the survey, improved user productivity accounted for the greatest cost savings from deploying the Riverbed appliances. On average, users increased their productive time by 7.4%, saving 0.9 hours a month or 10.6 hours annually. The savings in user productivity averaged \$102,741 per 100 users per year, based on a loaded annual salary of \$64,000 in the first year with annual 5% increases.

IT Efficiency

To determine the cost savings from IT labor optimization, IDC asked questions about staff time needed for activities before and after deploying the Riverbed appliances, as well as the loaded salaries of the IT staff.

On average, the companies were able to increase the number of users supported by each IT full-time employee by 5%. This resulted in average savings of \$4,848 per 100 users over three years, based on an average annual loaded salary for the IT staff of \$76,800 for the first year with annual 5% increases.

IT Cost Reductions

On average, the surveyed companies achieved additional IT cost savings of \$46,719 per 100 users over a three-year period. Hardware and software savings accounted for \$38,139 per 100 users, while bandwidth savings contributed a further \$8,369 per 100 users. IT operations costs were reduced by \$661 per 100 users.

Increased Revenue

On average, revenue growth amounted to \$3,219 per 100 users over three years. One respondent attributed the increase to better employees and higher employee performance. Prior to deploying the Riverbed solution, the company had to hire in regions where the pool of qualified people was exhausted. Since the deployment, the company can hire quality candidates from around the country. Because this organization can employ the most talented people in the country, its growth rate was enhanced 3–4% per year. Another respondent mentioned that his company's revenue increased by 1–2%. Because the system had increased efficiency and saved time, the organization could accept more contracts per year.

Payback and ROI

On average, the surveyed companies invested \$21,360 per 100 users over three years in deploying the Riverbed solution, including purchase and installation costs, IT labor support, maintenance, and training.

The total savings from the deployment averaged \$157,889 per 100 users over three years. From these savings, IDC deducts the opportunity cost of not having the initial investment in some other instrument yielding 12%. For the surveyed companies, this results in an NPV of the savings of \$103,321 per 100 users.

Based on the average investment of \$21,360 per 100 users, the payback period from deploying the Riverbed solution averaged 7.3 months for the companies surveyed, yielding an average ROI of 484%.

IDC ANALYSIS: CHALLENGES AND OPPORTUNITIES

As Web applications evolve, it is clear that demand for Web application delivery is growing and the future is positive. Customers are increasingly documenting and reporting on valuable business benefits after deployments.

Challenges

Despite the broader market adoption of WAN application delivery, there are still challenges. These challenges include:

- ☒ **Evolving application road maps.** Enterprise application deployments are never static, and the pace of change is only accelerating. Riverbed will need to understand the nature of new Web 2.0 and next-generation voice and video application communications. In particular, Riverbed will need to keep pace with how these next-generation technology road maps will impact WAN communications and determine how to position its products to continually offer value to end users relative to application performance and WAN optimization.
- ☒ **Cultivating an ecosystem.** As customers increasingly view WAN application delivery solutions within the context of the greater remote branch solutions, Riverbed should look toward opportunities to work with IT players that are

influential in datacenter and remote branch infrastructure (not just relative to networking). As such, Riverbed will need to continue focusing on developing its Riverbed Technology Alliance (RTA), working with partners across all aspects of the network, software, and services layers to benefit from an IT ecosystem.

Opportunities

There has never been a time when digital data has been generated so rapidly by businesses of all sizes and in all industries. At the same time, the pressure on organizations to manage their critical data effectively has never been greater. Customers are struggling to establish internal policies and best practices regarding information use, management, and retention.

Riverbed must further educate its customers on the benefits of setting up an environment that takes advantage of its data concentration and data management capabilities for improved disaster recovery and compliance. This coordinated architecture will better meet the rapidly expanding and increasingly demanding needs of the extended enterprise.

CONCLUSION

To determine the business benefits of wide-area data services, IDC recently interviewed IT managers at 12 companies of different sizes in various industries that had deployed the Riverbed WDS solution. IDC found that the deployment had resulted in average benefits over three years of close to \$158,000 per 100 users, when normalized for company size.

Increased user productivity accounted for the greatest benefit, amounting to an average of 65% of the total benefits. Savings in bandwidth, hardware, and software contributed a further 29% of the benefits, on average. Additionally, the companies were able to increase the number of users supported by each IT full-time employee by an average of 5% and boost revenue — in part because of their ability to hire quality people from around the country.

On average, the companies interviewed by IDC realized an ROI of 484%. Their investment in the Riverbed solution was repaid within an average of 7.3 months, after which the benefits continued to accumulate.

CASE STUDIES

Optimizing WAN Operations to Grow the Business: The ROI for GeoEngineers with Riverbed Technology's Wide-Area Data Services

Background

GeoEngineers is an architectural and design firm founded in 1980. The company has 16 offices globally with 300 employees. GeoEngineers earned \$36 million in revenue in 2006, achieving more than 10% revenue growth over 2005, while serving clients primarily in the energy, government, transportation, and natural resources industries. It combines environmental and technology consulting with specialties in ecology, applied technologies, environment, geophysics, horizontal drilling, and water resource management.

With operations in 10 U.S. states and 11 international locations, GeoEngineers' business requires the secure and reliable transfer of data at high speeds. With a healthy growth rate, driven both organically and through acquisition, the company faces the challenge of maintaining a network infrastructure that must be flexible while continually providing its users the highest performance levels. GeoEngineers' IT staff acquired and deployed Riverbed Technology's wide-area data services solution because of its ease of manageability during deployment, the increases in IT and user productivity that it offers, the scalability of the solution, and the cost savings associated with all of these attributes.

Business Impact of WDS

- ☒ **Getting started — speed and ease of installation.** When deploying a new technology, key value-adds are the ease and speed of installation. Riverbed's WDS solution proved to have both of these advantages. Courtenay Bernier, IT manager at GeoEngineers, explained that "it was so easy to install. We thoroughly reviewed our network infrastructure, tested the units, established a rollout plan, and determined the quickest way to install the units while minimizing downtime. Installing the units was literally a switch of two Ethernet cables and we were live." With respect to the speed of the installation, Bernier understood that installation required about one hour and noted that "we set up a couple of rules on the Riverbeds because we wanted to install the units without optimizing traffic. That way we made sure traffic passed through the units properly. Enabling traffic optimization was extremely easy (literally a click of your mouse) and we saw instantaneous results."
- ☒ **Scalability.** GeoEngineers' growth makes a flexible and expansive network a necessity. Sustaining the flow of information and matching demands on usage are critical ingredients for a growing business. GeoEngineers was not only expanding its operations in terms of offices and people but also adding technology such as videoconferencing and content collaboration (SharePoint) to position itself to capitalize on its acquisitions. The load on its corporate WAN was

a problem that threatened to slow momentum. Riverbed enabled GeoEngineers to reduce bandwidth by 50% despite its growth. Bernier explained that "we needed to scale our bandwidth-intensive applications and the Riverbeds actually helped. However, the Riverbed appliance does not only optimize bandwidth. Riverbed enables the ability to accelerate certain types of traffic, such as FTP traffic, MAPI traffic, CIFS traffic, HTTP traffic, and so on."

- ☒ **Improved user productivity.** Engineering services require collaboration, which entails the transfer of large data files such as CAD and GIS in addition to standard office productivity applications. Bernier noted that by optimizing the WAN, "we have increased production — our file transfers are much quicker. We also eliminated the need to deploy additional Exchange servers throughout the corporation because Riverbed optimizes MAPI traffic efficiently; SQL replications are much quicker and HTTP traffic is much more efficient as well." GeoEngineers feels its users who transfer files and use collaboration tools are 50% more efficient working over the WAN with Riverbed's WDS solution.
- ☒ **Optimized IT services.** According to Bernier, Riverbed's WDS solution offers a high reward in IT productivity in that it decreases the amount of time required for server management (hardware and software) by increasing the access speed to systems and devices. Bernier said, "We were able to eliminate the network spikes experienced when the service desk performed live help sessions with end users. File replication was also optimized, which greatly reduced the amount of bandwidth utilized, freeing it up for other critical network traffic. We do have class of service [CoS] implemented throughout the network; however, the Riverbeds enhanced CoS by adding the optimization layer."

GeoEngineers' ROI from Riverbed's WDS Solution

The primary reason for altering an enterprisewide network is the bottom line. Riverbed's WDS solution helped to optimize the infrastructure, reducing and positioning the company for growth with enhanced scalability, user performance, and increased collaboration; offering savings in bandwidth and IT FTEs; and increasing user productivity, all of which translate into value and high quality of performance for the corporation.

Bernier estimates that GeoEngineers added roughly 155 megabits of bandwidth to its 3-meg corporate WAN link without spending a dollar in new bandwidth. As a result, GeoEngineers avoided buying additional bandwidth (T1 lines) by installing Riverbed's WDS solution at each site, saving about \$500,000 per month. In addition, the virtual memory (cache) added by Riverbed improves the current network bandwidth, increasing its ability to handle larger workloads on fewer servers.

The optimized environment meant that GeoEngineers avoided adding email and database servers to support operations in each of its 16 offices. This cost avoidance totaled an initial outlay of \$825,000 for hardware and software and annual licensing fees of approximately \$382,500. Without adding the costs for upgrades and additional manpower to manage these servers, the average annual cost avoided for servers and software is about \$530,000.

Combined with bandwidth savings and IT operational savings, GeoEngineers is enjoying an annual benefit of close to \$1.7 million compared with a total investment of about \$130,000 in the Riverbed solution. These amazing savings are only part of the equation as the benefits of scalability, more productive employees, and more reliable operations should contribute to the top line as well.

Consolidating File Server Infrastructure with Riverbed Technology's Wide-Area Data Services: The ROI for Mitsubishi Motors Corporation

Background

Mitsubishi Motors Corporation (MMC), headquartered in Tokyo, Japan, is an automobile manufacturer with a strong commitment to the driving experience and safety. MMC's sales totaled over \$18 billion in revenue for 2006. The company has over 40,000 employees, more than 500 dealerships in all 50 states of the United States, and nearly 150 dealerships with over 800 selling locations in Japan.

Given MMC's size and worldwide locations, the company requires a global data infrastructure that offers employees, from administrators to engineers, reliable and quick access to information. The infrastructure supports 5,000 users domestically in Japan.

With a goal to reduce its operational costs, MMC deployed Riverbed's wide-area data services solution to facilitate an initiative to consolidate its file server infrastructure while increasing its file server capacity to support business expansion. As MMC's server management is outsourced, these savings are easily quantifiable. Not only was MMC able to reduce costs, but the consolidation enabled by Riverbed generated other benefits — more efficient management of data resources, reduced WAN traffic, quicker data transfer, decreased number of help desk tickets, and increased security levels.

Improvements in the Datacenter with WDS

☒ **Increased capacity and decreased costs without performance loss.** MMC's file server infrastructure enables the information flow from pricing, customer, and inventory databases to engineers, administrators, and even customer support. To support business expansion, MMC needed to increase data capacity but did not want to increase costs. Instead, it chose to migrate to larger servers in fewer locations, consolidating from 50 servers across three datacenters to three servers in a single datacenter. The consolidation reduced space and hardware support costs. In addition, MMC did not have to expand bandwidth to handle the increased data flow from its central datacenter. The Riverbed WDS solution allowed MMC to more efficiently manage its data without additional bandwidth. More importantly, it was able to deliver services to customers at locations that previously had local servers without performance losses due to latency or other data transfer issues.

- ☒ **More efficient server and data backup.** With respect to data backup, Yasuhiro Nishikawa, director, IT Planning and Control Department, Corporate Affairs Office at MMC, indicated that "we back up their data onto tape and we will keep it in the datacenter, but we used to have to do it at three different locations. However, because we consolidated the data system, the operation of the disaster recovery became more efficient." Further, "the data amount is still the same even though we are backing up at the one location. So the tape cost hasn't changed, but the manpower has changed."
- ☒ **Improved user productivity.** With the Riverbed WDS solution, files that were once maintained on separate servers or individual PCs are now stored in one centralized location. With the WDS solution deployed, all users have access to and may view all of the data on the system, as opposed to being restricted from servers or PCs other than their own. Groups in separate locations can now share data. Because of its collaborative capabilities, MMC estimates that the use of the Riverbed WDS solution has increased its productivity.
- ☒ **Reduced help desk costs.** MMC was able to consolidate its help desk operations as well. The help desk operations are more efficient now. When multiple trouble tickets are issued for a problem common to many workstations, the technicians can now resolve the single issue across the many users in one step. Prior to the deployment of the Riverbed WDS solution, the IT staff had to respond to each user individually. Now with one system, the users use the same request system and help desk staff can quickly identify common problems. "So for the operator at the help desk, it's definitely much easier now," noted Nishikawa.
- ☒ **Quicker business agility.** Prior to deploying the Riverbed WDS solution, opening new offices meant the client would have to maintain the provisioning for each PC and server in each of the new locations. The Riverbed WDS solution allows them to install the programs and move data to many workstations from the central server in a single maintenance initiative. Nishikawa explained that MMC has "small offices — about 10, 20 small offices — where they have 20 to 30 people working and we are thinking of expanding Riverbed, the file server system, throughout those offices. It would result in more savings."
- ☒ **Increased security.** The Riverbed Solution allows the IT staff to monitor and control the settings of one set of servers, rather than manage multiple locations, which takes more time and opens the door for incongruent security levels across the organization. Nishikawa mentioned that security was increased because "now, with the Riverbed [WDS solution], we were able to consolidate to one server, and therefore, we could manage the security well, the way we like it."

MMC's ROI from Riverbed's WDS Solution

As a direct result of the Riverbed Steelhead appliance, MMC is able to recognize savings of 12,000,000 yen annually in reduced operational costs to support the file server environment. Over the next three to five years, additional savings from the consolidation will accrue as MMC will have far fewer servers to support, upgrade, and replace.

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