Measuring the ROI of Riverbed SD-WAN

ROI Models for 100- and 1,000-Site Networks

An ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) White Paper
Prepared for Riverbed
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Executive Summary
This paper reviews the benefits of transitioning from a legacy wide-area network (WAN) to a next-generation WAN with Riverbed’s software-defined WAN (SD-WAN) solution. It calculates the potential return on investment (ROI) from deploying Riverbed SteelConnect and explores additional quantitative and qualitative benefits. EMA’s analysis shows that an enterprise can expect more than a 6X ROI over five years, with a payback period of fewer than ten months.

Expect a 6X ROI With Riverbed’s SD-WAN Solution
This paper examines the ROI from Riverbed SteelConnect for SD-WAN. Based on an Enterprise Management Associates (EMA) analysis, a 100-branch investment can pay back an enterprise in fewer than 12 months and deliver a 5.1X ROI over five years. A 1,000-branch investment will pay back an enterprise within 10 months and deliver an 6.1X ROI over five years. ROI from Riverbed SteelConnect is earned through a combination of savings on capital and operational expenses and financial benefits derived from increased network uptime.

Drivers of SD-WAN Investment
Enterprises are transforming their WANs for a digital future. These transformations are driven by several factors. First, cloud adoption demands a new WAN architecture. More than half (55%) of enterprises allow remote sites and branch offices to connect directly to external cloud services today, and MPLS-centric networks are not architected to support this change. Additionally, networks are growing and adding complexity. For instance, 83% of enterprises are increasing the number of sites that connect to the WAN. Finally, 84% of enterprises are seeing growth in the number of network-connected endpoints in remote sites, which adds demand for bandwidth.

Increased bandwidth demand and the need for direct cloud connectivity have driven enterprises to use broadband for enterprise WAN connectivity. Some enterprises are replacing MPLS altogether with broadband, while others are reducing their reliance on MPLS connectivity by supplementing it with more affordable broadband.

SD-WAN solutions enable these new hybrid networks by offering centralized policy and configuration management of these new architectures along with traffic steering, integrated security, and other features. EMA research has found that enterprises adopt SD-WAN primarily for improved application performance and direct and optimized access to external cloud resources. However, they also see SD-WAN as an opportunity to improve network security (and reduce network operational expenses).

Figure 1. Enterprises identify business drivers for SD-WAN adoption.
SD-WAN From a Proven WAN Performance Leader

A leader in the WAN optimization market, Riverbed has been optimizing WAN performance for more than a decade. With SteelConnect, Riverbed extended its product offerings into the SD-WAN market and continues to invest in new feature development and technology acquisitions. Riverbed SteelConnect is an end-to-end networking solution that includes centralized policy orchestration and automation, unified connectivity across the entire network fabric, integrated application performance management, integrated branch switching, and Wi-Fi. For this paper, EMA will focus on the SD-WAN element.

The main components of the Riverbed SD-WAN solution are SteelConnect Manager and SteelConnect Gateway. The SteelConnect Manager is a cloud-based management portal that offers workflows using graphical user interfaces (GUIs) for designing, deploying, and managing the SD-WAN network. It offers deep automation and integration with network functions such as one-click instantiation of WAN acceleration for cloud, integrated and context-based visibility, and controller-to-controller integration and automation with cloud services such as Zscaler, Amazon Web Services, and Microsoft Azure.

SteelConnect Gateways are a series of physical and virtual WAN gateway appliances that support zero-touch provisioning. The gateways provide unified connectivity (point-to-point and full mesh) across the network fabric and an integrated next-generation firewall. SteelConnect offers integrated performance management and optimization as well.

Assembling an ROI Model for Riverbed SteelConnect: Core Benefits

Five-year Investment

Based on the estimates provided by Riverbed, EMA found that the total investment of Riverbed SteelConnect (hardware, support, and software subscription) is 16% less than the investment to refresh traditional routers with bundled security software and five years of vendor support, based on published list prices from a leading router vendor. The difference in cost between the two solutions represents substantial initial CapEx and OpEx savings. Given SteelConnect’s integrated next-generation firewall, there is no need for enterprises to deploy a separate security appliance, which contributes to the savings.

<table>
<thead>
<tr>
<th>Deployment scenario</th>
<th>Investment for legacy network refresh and support</th>
<th>Riverbed investment</th>
<th>Total savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-branch network</td>
<td>$548,200</td>
<td>$458,206</td>
<td>$89,994</td>
</tr>
<tr>
<td>1,000-branch network</td>
<td>$5,482,000</td>
<td>$4,595,584</td>
<td>$886,416</td>
</tr>
</tbody>
</table>

Note: The Riverbed investment will vary based on product quantities, bandwidth requirements, product model details, and configuration requirements and is not intended to represent any commitment on pricing.
Reduced Operational Expenses: Network Connectivity

The typical legacy WAN relies primarily on MPLS connectivity for enterprise application traffic. SD-WAN enables enterprises to establish a hybrid network that combines a lower amount of expensive MPLS bandwidth with broadband. In North America, the monthly cost for MPLS connectivity ranges in price from $100 to $300 per megabit per second. The average monthly cost of business broadband connectivity is $5.39 per 1 Mbps per month, according to a survey of 120,000 telecom price quotes conducted by businessinternet.com. A hybrid WAN approach delivers more bandwidth to the enterprise at a lower cost and also facilitates direct access to the public cloud from branch offices.

For this study, EMA assumed that an enterprise, enabled by Riverbed SteelConnect, would replace a legacy network that has two MPLS links per site (a total of 3 Mbps) with a hybrid network consisting of one 1.5 Mbps MPLS link and one 25 Mbps broadband connection per site. This hybrid network will save an enterprise OpEx costs and increase available bandwidth by 8.8x, allowing the network to support bandwidth-intensive applications like video conferencing and rich media.

<table>
<thead>
<tr>
<th>Deployment scenario</th>
<th>5-year cost for MPLS network (3 Mbps per site)</th>
<th>5-year cost for Riverbed-enabled hybrid network (1.5 Mbps MPLS and 25 Mbps broadband per site)</th>
<th>Total savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-branch network</td>
<td>$2,700,000</td>
<td>$2,158,500</td>
<td>$541,500</td>
</tr>
<tr>
<td>1,000-branch network</td>
<td>$27,000,000</td>
<td>$21,585,000</td>
<td>$5,415,000</td>
</tr>
</tbody>
</table>

IT Productivity Gains

Riverbed SteelConnect improves operational efficiency and resource productivity through the use of an intuitive and workflow-based management console.

This GUI management environment provides engineering and operations workflows that can significantly reduce the time required to perform common WAN management tasks. During an interview with a EMA, a Riverbed customer provided specific examples of the impact that the Riverbed’s SD-WAN solution had on improving IT and network operations. Based on this customer feedback and EMA analysis, we believe that the SD-WAN solution can provide a boost in productivity resulting in tremendous value in an ROI analysis.

EMA estimates that an IT organization can realize a 3.1X productivity gain when switching from a legacy 100-site WAN to a Riverbed SD-WAN solution and a 4.4X productivity gain for a 1,000-site WAN. This productivity gain is realized by allowing junior network engineers to assume a larger role in day-to-day WAN management. Advanced-level network engineers are then able to devote more time to strategic IT initiatives. Given that EMA research has consistently found that network professionals spend more than two-thirds of their week on network problem resolution, this productivity gain will be immensely valuable to enterprises, enabling IT to focus on strategic initiatives like digital transformation, cloud adoption, the Internet of Things, and mobility.

<table>
<thead>
<tr>
<th>Deployment scenario</th>
<th>Five-year employee time investment for operating a legacy network</th>
<th>Total productivity gain</th>
<th>Total value of productivity gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-branch network</td>
<td>$2,370,000</td>
<td>3.1x</td>
<td>$1,609,500</td>
</tr>
<tr>
<td>1,000-branch network</td>
<td>$26,860,000</td>
<td>4.4x</td>
<td>$20,776,000</td>
</tr>
</tbody>
</table>

Note: Assuming junior engineer salary of $101,400 and advanced-level engineer of $158,000/year
Improved Uptime

EMA’s analysis estimates that a successful Riverbed SteelConnect SD-WAN implementation could reduce WAN downtime by 25% due to reduction of human error. This reduced downtime will translate into significant savings.

The Riverbed SteelConnect Manager enables GUI-based centralized orchestration and policy-based management. Since network managers no longer have to manually program and configure individual network devices via a command-line interface (CLI), the chances of downtime due to a configuration error are reduced nearly to zero. EMA assumed that the typical enterprise achieves “3 1/2 nines” of uptime on the WAN, which translates into 4.38 hours of downtime per year. Industry research has shown that network downtime costs most enterprises $100,000 or more per hour and that 25% of outages are attributable to configuration errors. For the purpose of this research, EMA assumed that a 100-branch WAN would lose $100,000 per hour of downtime and a 1,000-branch office would lose 10 times that amount, or $1,000,000 per hour.

<table>
<thead>
<tr>
<th>Deployment scenario</th>
<th>Five-year downtime costs associated with a WAN with 3½ “9s” reliability</th>
<th>Benefit of reducing downtime by 25% with Riverbed SD-WAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-branch network</td>
<td>$2,190,000</td>
<td>$547,500</td>
</tr>
<tr>
<td>1,000-branch network</td>
<td>$21,900,000</td>
<td>$5,475,000</td>
</tr>
</tbody>
</table>

Final Five-Year ROI Analysis

<table>
<thead>
<tr>
<th>Savings</th>
<th>100-Branch WAN</th>
<th>1000-Branch WAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>CapEx savings versus router refresh</td>
<td>$89,994</td>
<td>$886,416</td>
</tr>
<tr>
<td>Network connectivity savings (hybrid network)</td>
<td>$541,500</td>
<td>$5,415,000</td>
</tr>
<tr>
<td>Enhanced IT productivity</td>
<td>$1,609,500</td>
<td>$20,776,000</td>
</tr>
<tr>
<td>Benefit of improved uptime</td>
<td>$547,500</td>
<td>$5,475,000</td>
</tr>
<tr>
<td><strong>Total savings</strong></td>
<td><strong>$2,788,994</strong></td>
<td><strong>$32,552,416</strong></td>
</tr>
<tr>
<td><strong>Total investment in Riverbed SD-WAN</strong></td>
<td><strong>($458,206)</strong></td>
<td><strong>($4,595,584)</strong></td>
</tr>
<tr>
<td><strong>Total 5-year ROI</strong></td>
<td><strong>$2,330,788</strong></td>
<td><strong>$27,956,832</strong></td>
</tr>
<tr>
<td>ROI savings over MPLS</td>
<td>5.1X</td>
<td>6.1X</td>
</tr>
<tr>
<td>Time until Riverbed solution payback</td>
<td>11.8 months</td>
<td>9.9 months</td>
</tr>
</tbody>
</table>

Note: These ROI calculations are based on multiple industry-wide assumptions. ROI results will vary by geography, vertical industry, and other variables. The Riverbed investment will vary based on product quantities, bandwidth requirements, product model details, and configuration requirements and is not intended to represent any commitment on pricing.

1 2016 survey by Information Technology Intelligence Consulting
Measuring the ROI of Riverbed SD-WAN:
ROI Models for 100- and 1,000-Site Networks

Additional Benefits and Savings Not Included in ROI Model
EMA identified several other potential qualitative and quantitative benefits to enterprises that invest in the Riverbed SD-WAN solution.

Deployment agility. The Riverbed SD-WAN solution enables zero-touch provisioning for SteelConnect Gateways. This eliminates the need for a network engineer to travel to a branch office. Instead, on-site staff, such as desktop support administrators or even line-of-business staff can physically install the device with remote guidance from an engineer. Also, the process of provisioning and configuring the device once it is manually installed is done programmatically via the SteelConnect Manager. EMA estimates that the time to get a branch up and running using Riverbed SteelConnect could be reduced from 2.5 business days to just 2 hours. This accelerates time to value. In the case of a new retail outlet, the new site could start generating revenue more quickly by opening the store earlier.

Integration with other Riverbed solutions. Enterprises can integrate the Riverbed SD-WAN solution with Riverbed SteelHead WAN optimization to extract even more value from the bandwidth at each site. They can integrate the solution with Riverbed SteelConnect distributed LAN solutions, like branch office switching and Wi-Fi, to gain additional operational efficiencies from managing distributed LAN solutions via the same SteelConnect Manager console. Enterprises can also integrate Riverbed's SD-WAN solution with Riverbed SteelCentral performance management solutions, which enhance visibility into networks and applications on the WAN.

EMA Perspective
Based on EMA's analysis, a successful hybrid WAN implementation with Riverbed SteelConnect can deliver a sixfold return on investment over five years, with a full payback on the initial Riverbed investment in less than ten months. EMA bases this ROI analysis on several assumptions.

• An investment in a Riverbed SD-WAN solution is approximately 16% less than the cost of refreshing routers in a legacy environment, based on list prices from a leading routing vendor.
• A hybrid WAN enabled by the Riverbed SD-WAN solution, which replaces half of a company's MPLS connectivity with business broadband, will result in lower monthly network connectivity costs but higher total available bandwidth.
• The Riverbed SD-WAN solution is simpler to manage than a legacy network and typical network deployment and management tasks will be accelerated. Network engineers can focus their time on strategic IT projects that deliver more value to the enterprise.
• The ease of managing the Riverbed SD-WAN solution reduces network downtime, thanks to the reduction of configuration errors associated with manual CLI-based management of legacy networks. This allows an enterprise to avoid the costs associated with network downtime.

Given this analysis, enterprises that adopt Riverbed's SD-WAN solution can expect to earn an ROI that runs into the millions of dollars over a five-year period.

About Riverbed
Riverbed enables organizations to modernize their networks and applications with industry-leading SD-WAN, application acceleration, and visibility solutions. Riverbed’s Digital Performance Platform allows enterprises to transform application and cloud performance into a competitive advantage by maximizing employee productivity and leveraging IT to create new forms of operational agility. At more than $1 billion in annual revenue, Riverbed’s 29,000+ customers include 97% of the Fortune 100 and 98% of the Forbes Global 100. Learn more at www.riverbed.com.
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Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that provides deep insight across the full spectrum of IT and data management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help EMA’s clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise line of business users, IT professionals, and IT vendors at www.enterprisemanagement.com or blogs.enterprisemanagement.com. You can also follow EMA on Twitter, Facebook, or LinkedIn.

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