Solution Showcase

Riverbed: Network Performance Management Solutions for Modern Business

A Unified Approach for Complex, Distributed Environments

Date: January 2020 **Author:** Bob Laliberte, Senior Analyst; and Leah Matuson, Research Analyst

Abstract: The IT pendulum is swinging from consolidated to distributed environments, creating more complexity, causing network requirements to rapidly evolve, and necessitating organizations to rethink network performance management (NPM) strategies. With maturing digital transformation initiatives, networks must support highly distributed applications and user environments. As a result, these operations teams require holistic visibility across the hybrid network and network devices to ensure optimal application performance and an enhanced user experience.

Deploying a unified network performance management solution allows organizations to leverage device, flow- and packet-based monitoring. In turn, the benefits derived from a more mature and holistic approach include faster troubleshooting, more effective collaboration between applications and development teams, and proactive enforcement of SLAs, yielding better user experiences. Riverbed NPM offers unified network performance management, expanding visibility across clouds, IoT, and at the edge—enabling organizations to realize improved performance management across highly distributed environments.

Enterprise Environments Are Rapidly Evolving

IT environments are becoming more complex. According to ESG research, two-thirds (66%) of IT professionals say that IT is more complex than it was two years ago.[1] Now, the IT pendulum is swinging toward distributed environments— applications are housed in on-premises data centers, in public clouds (both IaaS and SaaS), and at the edge (ROBOs and more). Existing application architectures span monolithic, service-oriented architectures (SOAs) and microservices. Networks can range from physical to virtual, connecting traditional IT devices, IoT sensors and devices, virtual machines (VMs), and containers. These new environments are not only dynamic, but also, in some cases, ephemeral, with networks and associated services only running for mere seconds.
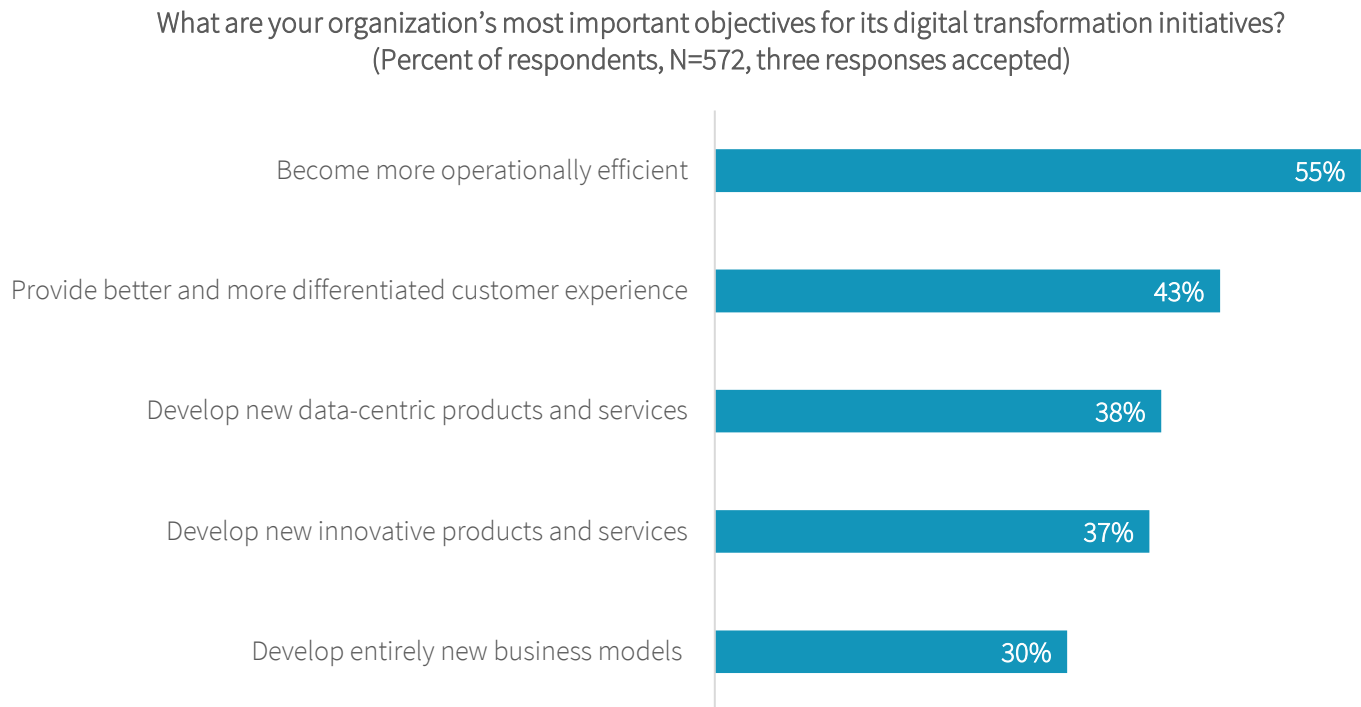
That said, digital transformation continues to mature year over year. ESG research shows that 17% of organizations are considered mature (have implemented and optimized several digital transformation initiatives), while 40% are currently in process (currently implementing and executing various digital transformation initiatives). Further, more than half (55%) of enterprises said their organization's most important objectives for their digital transformation initiatives include becoming

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[1]Source: ESG Master Survey Results, *2019 Technology Spending Intentions Survey,* March 2019. All other ESG research references and charts in this solution showcase have been taken from this master survey results set.

more operationally efficient, while 43% said that driving differentiated customer experiences was one of their most important objectives, and 38% said developing new data-centric products and services (see Figure 1).

Because the network plays a critical role in enabling these modern, highly distributed environments, organizations must be ready to deploy unified network performance management solutions to support them.

Figure 1. Operational Efficiency Remains Most Common Objective for Digital Transformation

What are your organization's most important objectives for its digital transformation initiatives?
(Percent of respondents, N=572, three responses accepted)

Objective	Percent
Become more operationally efficient	55%
Provide better and more differentiated customer experience	43%
Develop new data-centric products and services	38%
Develop new innovative products and services	37%
Develop entirely new business models	30%

Source: Enterprise Strategy Group

Challenges Created by Highly Distributed Environments

As organizations progress on their digital transformation journeys—distributing applications and IoT sensors across on-premises data centers, public clouds, and edge environments—the network will become even more important in supporting day-to-day operations and enhancing user experiences. In fact, according to ESG research, 21% of business users indicate that poor network connectivity that creates poor web- or cloud-based application performance is one of the technology challenges that have had the biggest impact on employee productivity. Since many conventional application management tools are unable to provide a comprehensive view of an organization's network, this situation can lead to a myriad of challenges, including the following:

- **Blind spots across distributed environments.** Does IT have full visibility across on-premises and cloud or multi-cloud environments? Is there full visibility across physical, virtual, and/or container environments? Lack of collaboration between flow-based cloud monitoring and cloud-aware packet-based monitoring can greatly reduce insight into costs, application, and device performance, preventing IT from viewing a complete picture of the entire hybrid network.

- **Limited data collection methods.** Immature systems may not collect data at a granular enough level (i.e., sampling or five-minute intervals), or only allow limited data collection for packet-based or device-based data. Without holistic, granular data collection, important details can be missed—leading to costly troubleshooting delays and impeding

mean time to repair (MTTR). Organizations must have a detailed understanding regarding what data collection methods are currently employed and the granularity at which data is collected.

- **Difficulty isolating problems.** When IT is unable to determine the source of a problem due to its failure to retain detailed historical data (as well as its inability to view application and device data across the network), identifying and resolving a problem, especially cross-domain issues, can become inefficient and costly. Even using multiple solutions, swivel chair management (moving between multiple screens) is time consuming and error prone—which previously may have been acceptable, but moving forward will not be tolerated.

- **Inability to integrate with existing solutions**. If IT has little or no ability to feed existing data streams into management platforms, collaboration can become severely limited between teams across the organization, including DevOps and IT Ops. Integration must provide both northbound and southbound interfaces (i.e., a northbound interface permits a specific network component to communicate with a higher-level component, while a southbound interface permits a specific network component to communicate with a lower-level component).

So how can organizations gain the insight they need to successfully continue on their digital transformation journeys, enabling holistic visibility for monitoring application and network performance across on-premises environments, as well as public, private, and hybrid clouds? Think unified network performance management (NPM).

Unified Network Performance Management

It stands to reason that a network must help accelerate an organization's digital transformation, cloud, and IoT initiatives, not slow them down. Therefore, it's essential for organizations to choose the most appropriate network performance management solution to fulfill their company's unique needs, ensure the network is delivering the necessary performance, and help drive progressively higher levels of efficiency, productivity, and positive user experiences. Specifically, organizations should look at leveraging a solution that offers:

- **Comprehensive visibility.** Providing full transparency across on-premises, cloud or multi-cloud, and edge environments, as well as across physical, virtual, and/or container environments, is vital. In addition, the solution should have the capability to leverage data feeds from existing disparate tools, while still providing the ability to recognize and understand application paths and dependencies.

- **Deep integration.** In a highly complex distributed environment, modern solutions need to have tight integration within their product portfolios or families, with multiple cloud services, with third-party software via open APIs, and with existing tools (e.g., application performance management, logging, and workflow).

- **Holistic data collection.** Essential to improving data analysis and integration across the organization, the solution should be capable of monitoring and validating granular device-, packet-, and flow-based information. By collecting all three with sufficient granularity, organizations are able to ensure there are no blind spots and that all issues are quickly identified and rectified. Ultimately, access to all of this data should help to fuel more proactive management of the network environment.

- **Artificial intelligence (AI) and automation technology.** As network complexity increases and the amount of collected data continues to grow unchecked, organizations should look to add intelligence to the solution to swiftly verify and correct issues (potentially in other domains) before they can negatively impact the network. Ideally, analytics should be applied across all domain boundaries to detect patterns that only emerge when cross-domain data is gathered together for analysis. Finally, organizations should look to leverage AI-based automation to drive self-healing and self-optimizing networks, as well as deliver higher levels of security utilizing anomaly detection.

Riverbed Offers a Holistic Approach

A leader in application and network performance, Riverbed enables organizations to deploy a unified network performance management solution capable of accelerating key business and technology initiatives. Riverbed NPM offers organizations enhanced visibility across the network, helping to improve agility, efficiency, and performance.

Riverbed NPM presents a comprehensive digital management strategy comprising tightly integrated device (SNMP and synthetic,) flow, and packet monitoring across on-premises, virtual, and cloud environments. These data sources are further integrated in the Riverbed Portal, where personalized dashboards and cross-domain analytics can be used to quickly isolate problems across the distributed network and application ecosystem.

Riverbed NPM allows organizations to drive greater operational efficiencies. The solution's unified approach to performance monitoring across the hybrid network offers IT visibility into end-user experience, network, infrastructure, and applications. With a more efficient use of resources, IT is able to expend less time dealing with routine, labor-intensive issues, and more time working on value-added initiatives. AI Ops teams are able to extract intelligence from raw data via algorithms and automation, in turn providing valuable insights to line-of-business teams—which can directly affect the bottom line.

A comprehensive solution, Riverbed NPM aids organizations in creating new data services and products. Open APIs allow organizations to collect and share a broad spectrum of data with third-party solutions, which can leverage this data to achieve a better understanding of the needs of the organization.

The Bigger Truth

The growing complexity of distributed IT environments (multiple clouds, IoT, and edge) continues to send a strong signal to organizations across industries—especially when it comes to network performance management solutions. Patching together legacy tools and disparate solutions doesn't work. Instead, it reduces agility and efficiency, drains productivity, diminishes the user experience, and drives up costs. Organizations embarking on, or in the midst of, their digital transformation journeys should be looking at an end-to-end network performance management solution that provides granular data collection and tightly integrates device-, packet-, and flow-based monitoring.

Riverbed NPM offers unified network performance management, expanding visibility across clouds, on-premises data centers, and at the edge, enabling organizations to attain improved performance management across highly distributed environments. The solution offers holistic, open management of complex environments, providing the intelligence and automation needed to accelerate digital transformation, cloud, and IoT initiatives. Those organizations looking for a unified network performance management solution should consider Riverbed NPM. For additional information on Riverbed NPM, please visit: www.riverbed.com/steelcentral

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