The Importance of Visibility to the End User Experience

MARKET TRENDS REPORT

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Introduction

Every aspect of government missions depends on high-level app and network performance. That's why ensuring assets work the way they should, and remediating problems before they arise, are top priorities.

Agencies need to be able to gauge performance everywhere, at all times, across a complex web of legacy, mobile, cloud and shadow IT components. But agencies struggle with real-time end-to-end visibility into pain points and areas of underperformance. This means it can be difficult to quickly detect, diagnose and defeat problems before they impede productivity.

Remember when Healthcare.gov first launched after the passage of the Affordable Care Act? Higher-than-expected demand caused the site to go down the first day, and issues lingered for months. Because website administrators didn't have adequate performance visibility or useful metrics, they often failed to keep the site functional.

An application performance management (APM) solution would have alleviated some of the problems more quickly. APM provides the ability for agencies to monitor, alert and troubleshoot problems for key applications, regardless of where they reside – on premise, in the cloud, on an individual user's desktop or on a mobile device.

By knowing where, when and why issues occur via APM, agencies can proactively eliminate bottlenecks with faster time-to-remediation. In many cases, APM enables the resolution of problems before they even occur.

To better understand why agencies need deeper visibility into the end user experience, GovLoop partnered with Swish Data, a leading provider of technology and engineering services and solutions, for this report. Swish Data incorporates Riverbed Aternity, an APM solution, into its portfolio for federal procurement.

The following pages explore end user experience and application monitoring challenges, along with solutions for overcoming them. We also gain insights from Sean Applegate, Chief Technology Officer at Swish Data.

Growth in the use of SaaS applications increases the need for APM.

30%

Cloud spending grew by 9% among civilian agencies, and by almost 30% among underlined defense agencies from fiscal years 2017 to 2019.

Federal workers are not satisfied with their current application environment.

54%

of federal employees are primarily frustrated by speed and load time of applications.

47%

of federal employees are primarily frustrated by application crashes or freezes.

Agencies are not meeting citizens' needs.

53%

of citizens rated their online experience with government agencies as poor.

2-8%

Each time a federal agency's CX Index score rises by 1 point, 2-8% more citizens will trust the agency.

"A good [app] experience makes citizens more willing to engage consistently with the organizations that provide it, and that makes agencies better able to achieve mission-critical results."

THE CHALLENGE
Monitoring Applications, Integrating Processes and Achieving Visibility

IT staff requires visibility into the end user experience when employees use apps in the cloud, on mobile devices or virtually. But getting a detailed look at how things are running across different environments is difficult at best, and administrators have often relied on a hodgepodge of tools that fall short.

What's needed is a centralized view that pulls information from all sources.

The following are some of the main challenges that highlight the need for APM in government.

1. Poor end user experience: Agency employees struggle with outdated technology and work environments that can't respond quickly to changing mission needs. Line of business and IT departments struggle to clearly identify productivity constraints and validate technology investments. Citizens are challenged by the inability to successfully interact with important government services via digital channels due to less-than-optimal application performance, digital service project delays and budget constraints. Overall, poor user experience deters agencies from achieving their mission. You can't improve user experience without clearly understanding how end users interact with your internal and external applications.

2. Measuring cloud service SLAs: The federal government relies increasingly on cloud-based applications such as Microsoft Office 365, Salesforce, ServiceNow and other Software-as-a-Service (SaaS) offerings. The provider typically owns the applications, and delivers them according to a service level agreement (SLA). But agencies often have limited monitoring capabilities using provider

tools, which can hinder the timely identification of issues and troubleshooting. When performance or availability issues occur, an agency may not be able to easily determine if the provider is meeting SLA obligations.

3. Integration into existing processes: A monitoring solution must seamlessly integrate into existing processes, such as IT ticketing systems and security logging systems. Many agencies also look for ways to incorporate more end user self-service, such as building automated remediation responses for simple troubleshooting, to reduce helpdesk workloads.

4. Capacity planning and performance analysis: Applegate emphasizes the need for "a regular cadence" in using analytics for more accurate capacity planning and performance analysis, which is difficult to master without the proper tools. But extracting maximum value from monitoring and achieving a cycle of continuous improvement is extremely beneficial to agencies.

Given these challenges, agencies need a comprehensive solution that provides application monitoring, integration with existing services and deep visibility into the end user experience.

THE SOLUTION
Application Performance Management

Application performance management is the solution to ensuring a positive end user experience. By investing in an APM solution, agencies can proactively monitor the end user experience of any local, cloud, web or enterprise mobile app running on any physical, virtual or mobile device.

This level of monitoring allows agencies to identify and rapidly resolve problems to ensure the efficient delivery of digital services to citizens and high levels of workforce productivity for government employees. Insights gained from APM also help agency leads make smarter operational decisions, which can directly impact the mission.

An important step in APM implementation is identifying key business applications and how to instrument them. Instrumenting an application means enabling it to be monitored and its performance to be measured. Think of APM instrumentation like a heart monitor of sorts. Agents, which are small, lightweight programs, actually monitor applications. The APM management tool reads gathered data and then alerts administrators when an application is not operating normally. It also helps diagnose errors and provides a plethora of performance metrics.

After baselines are established, APM looks for performance problems or constraints in applications, infrastructure and end user devices. For example, APM may detect that an application is running slower than usual because there's not enough available memory or disk space. APM points to the problem, enabling staff to modify processes to speed up transactions.

APM can also measure user productivity. The system monitors user actions, such as creating a new record or submitting a report, providing even deeper visibility into how applications perform and respond. Another benefit of monitoring at this level is the ability to inventory software based on how it's actually used by end users rather than where it's installed. Armed with this data, administrators can renegotiate end user license agreements (EULAs) with vendors to potentially reduce costs.

Finally, APM data can support a continuous improvement process to identify targeted changes to be made to specific business transactions. As a result, agencies can reduce labor costs, if necessary, while providing citizen services more efficiently.

HOW SWISH AND RIVERBED HELP

Riverbed SteelCentral Aternity delivers faster insight into the actionable information that enables government agencies to meet mission requirements. Unlike products that sample transactions and provide metrics at intervals of one minute or more, SteelCentral exposes all problems at all times, ensuring that agencies don't miss even the most sporadic problem.

Swish Data is experienced in implementing APM solutions across government agencies and helping those agencies maximize the value of their investment. Swish services include practical training on APM tools, as well as managed services that reduce time and effort by the agencies' IT staff.

"The cost of a typical one-hour outage at a large government agency can exceed $1 million. The productivity impact can cost much more. So the ability to identify and solve a problem quickly pays itself back many times over," Applegate said.

Read more about Aternity at: riverbed.com

Case Study: Improving Performance Application Issues

A government agency ran a legacy desktop application to process citizen case files for services. The application created a record for each case, and maintained necessary forms for processing, reviews and approvals.

The application began experiencing performance issues. It took increasingly longer to process records and frequently crashed, which frustrated users and caused a significant case backlog. The development team wasn't able to easily visualize the problem. The agency, along with IT support staff, struggled to understand what was occurring from the end user perspective, what was causing the application to hang and how to fix it.

This agency installed Riverbed Aternity to address the problem. Doing so allowed IT and the developers to "see" what was happening at the desktop level, per user, and then correlate it across the entire enterprise to determine if the same issue had occurred.

Over a one-year period, the agency identified 25 discrete problems. It resolved the most critical problems first – those that impacted mission attainment and then moved to less pressing issues. By the end of the year, the agency had significantly reduced the case backlog.

Because the application became much more efficient, employee satisfaction increased significantly and citizens viewed the agency as more valuable.

BEST PRACTICES
Investing in and Using an APM System

Pick a solution that's deployment-friendly.

One of the biggest challenges with deploying an APM solution is instrumentation, whether at the application or end user level. Having a single monitoring agent minimizes any performance hits from the agent itself, and it's easy to adopt and deploy. Your chosen solution should provide broad visibility into the environment, and not just focus on a single piece of code or a single application. The solution should also automatically discover hardware, operating systems and applications, and, ideally, instrument them as well.

Target your most critical apps first.

To get started, Applegate recommends focusing on your four or five most critical applications, making sure you have deep visibility into their capabilities. Involve relevant staff members, including managers, to thoroughly analyze and understand the metrics you generate. Then, share the knowledge gained with other teams, and develop best practices that will apply to your remaining applications.

Integrate APM with existing systems.

Many enterprise software solutions, such as IT ticketing systems and data analytics, provide dashboards for ease of use. Integrate your APM solution into those dashboard views. Doing so enables users at all levels to consume APM analytics and apply them to their work, and it allows IT teams to work together to solve problems faster.

Identify and optimize constraints.

APM enables you to identify constraints, and then optimize those constraints by rewriting code or fixing an under-resourced server, for example. Identifying and optimizing constraints gives you a lot of benefit very quickly, and can benefit your agency's mission in a targeted way.

Conclusion

Visibility into all aspects of end user application use is difficult to obtain. By using a proven, robust APM solution, you can improve the end user application experience regardless of where or how applications are hosted. APM also enables you to overcome cloud SLA challenges and perform more accurate capacity planning and performance analysis. Because state-of-the-art APM solutions are designed with integration in mind, support processes such as IT ticketing and end user self-service troubleshooting lend themselves to smoother automation.

Every aspect of your mission — from worker productivity to your applications — depends on high-level app and network performance. That's why ensuring assets work the way they should, and beating problems before they arise, is a top mission priority. Application performance management gives you end-to-end visibility to real-time pain points and areas of underperformance — allowing you to quickly detect, diagnose and defeat problems before they impede your operations.

ABOUT SWISH DATA

Swish is a customer-centric, specialized integrator with an engineering first culture. Swish focuses on IT Modernization, Performance and Cybersecurity solutions. Swish strives to bring value to clients through continuous improvement expertise; robust services, superior engineering and creative solutioning.

Learn more at swishdata.com.

ABOUT RIVERBED

Behind every digital experience is a human one, and Riverbed enables organizations to measure digital experiences and maximize digital performance so they can deliver better and more powerful human experiences— for customers, employees, partners, patients, and citizens. Riverbed's Digital Performance Platform includes a combination of Digital Experience Management and Digital Networking solutions that ensure superior digital and user experiences, provides new levels of operational agility and accelerates business outcomes. Riverbed's 30,000+ customers include 100% of the Forbes Global 100.

Learn more at riverbed.com.

ABOUT GOVLOOP

GovLoop's mission is to "connect government to improve government." We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

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