The Case for SaaS Application Performance Management

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Application performance management (APM) focuses on monitoring, maintaining, and optimizing the performance and health of business applications across development, test, datacenter, and network environments. As mission-critical enterprise application environments become more complex because of the increased use of cloud, big data, and mobility, APM is becoming a top priority for IT teams that need to quickly and cost effectively track end-to-end application performance, identify and remediate the root cause of performance problems, and maintain service levels required by end users and business stakeholders. SaaS-delivered APM solutions offer rapid time to value for IT organizations that need to implement APM quickly with minimal disruption to the business.

The following questions were posed by New Relic to Mary Johnston Turner, research vice president of IDC's Enterprise System Management Software practice, on behalf of New Relic's customers.

Q. Application performance management has been around for a long time. Is there any reason that enterprise IT operations and development teams should consider reviewing or updating their APM strategies?

A. Historically, application performance management solutions were deployed using complex on-premise software that required dedicated training and expertise to configure, interpret, and maintain. As a result, APM was primarily used by very large enterprises that had specific mission-critical application performance challenges. These organizations often focused on real-time monitoring of just a few high-value applications or used APM diagnostics on an "as needed" basis to isolate the cause of specific problems related to application code or Web site performance and end-user experience. Many early-generation APM solutions relied on automated synthetic models, agents, or scripts to simulate end-user interactions with a Web site or application. IT teams typically required a significant amount of internal skills, expertise, and time to build and maintain scripts and analyze the data collected on an ongoing basis. Some early-generation APM monitoring agents introduced significant overhead into application performance, which forced IT teams to limit use so as not to compromise day-to-day SLAs.

Over the past several years, application environments have become much more dynamic as a result of the adoption of virtualization, cloud, mobility, and big data, as well as the use of complex, multitier application architectures. In response, new APM solutions are emerging that are more suited to the needs of today's environments. They are designed for a wider range of users, including IT operations teams, development teams, and line-of-business analysts. These solutions are designed to be easier to deploy and navigate and drive faster time to value than script-based solutions while still providing sophisticated information about the fundamental behavior of the code, the browser, the mobile app, and the end-user experience.
Q. **How are changes in application development environments and increased use of cloud, mobile, and Web platforms altering the requirements for APM solutions?**

A. Historically, many applications were fairly monolithic and tightly coupled to a specific stack of hardware, middleware, and infrastructure. As a result, much of the application performance root cause analysis relied on the IT staff's knowledge of the interactions across these tightly coupled stacks. In today's environment, cloud and virtualization enable workloads to migrate and scale rapidly and become very loosely coupled to infrastructure. Multitier applications are increasingly supported by a hybrid mix of public cloud, private cloud, and noncloud infrastructure where IT organizations may not be able to fully control hosted or private infrastructure components. Similarly, increasingly diverse mobile client devices create highly unpredictable end-user experiences, and development environments are moving from rather static, slow evolution and waterfall methods to more continuous delivery strategies that find applications being quickly written, tested, released, updated, and released again in almost real time.

Today's APM solutions need to detect problems and speed resolution across a wide range of applications, in real time, even as the proliferation of Web and mobile interfaces results in less predictability at every point in the process. With all the complexity in today's environments, it's just much more difficult to isolate the source of problems and to provide enough context to the developers and the operations team so that they can remediate those problems quickly. APM becomes increasingly vital to the overall success of businesses.

Q. **Why should large enterprises consider SaaS APM?**

A. In the early days, SaaS was often seen as a lightweight alternative to more sophisticated enterprise-scale solutions. However, as the use of SaaS delivery platforms has matured, a number of vendors in a variety of enterprise-class software categories have proven that SaaS solutions can be built to handle the needs of many demanding enterprises.

IT decision makers who are wondering whether a SaaS APM solution can offer enough horsepower, scale, and depth to address the needs of their organization would do well to look at the current generation of SaaS APM offerings. Many enterprise-class organizations are finding that SaaS solutions can be activated and begin to deliver value almost immediately without the need to invest in supporting infrastructure resources and specialized staff training. Many APM SaaS solutions rely on lightweight agents that can be quickly downloaded and implemented. Typically, the learning curve for IT teams to begin seeing value from these solutions is measured in days, although ongoing expansion of applications and resources monitored, and staff becoming more familiar with APM, will continue to increase the value over time. Many SaaS APM solutions come with significant prebuilt reports and models, allowing organizations to quickly get that time to value.

Another benefit of a SaaS APM implementation is that organizations can scale the use of APM at whatever rate makes sense for them. They can add new agents, change settings, or expand the range of users as needed in real time. This allows IT teams to start with just a few applications or use cases initially and then scale up for different points in the application life cycle depending on business priorities.

SaaS can provide a flexible, low-cost entry point for getting involved with APM. For many organizations that have not made a significant investment in APM, SaaS is a good way to quickly see whether APM will provide value.
Q. What advanced features and functions should an enterprise look for in a SaaS APM solution?

A. A SaaS APM solution offers quite a range of features and functions, many of which are focused on ease of use and time to value. One priority is ease of activation. Organizations want to activate an APM solution, target its use, and begin to derive value quickly. A SaaS APM solution should have good graphics and visualization because it will be dealing with data coming from multiple sources, and IT staff need to quickly cut through the data streams to see what is critical for maintaining or improving application performance.

In addition, the ability to customize different views of the APM data for different roles and the capability to develop custom reports are important to ensure that the information that's being collected is adding the most value to the broadest range of people who might have interest in it. Advanced analytics and root cause diagnostics can help correlate and sort out the real dependencies and get down to the core issue and help sort through all the second-tier problems that may tie back to the original root cause. The ability to scale up in terms of numbers of users, devices, and transactions and the ability to scale down in situations where the organization's business is very seasonal are vital.

In terms of applications supported, it is important to look for products that support both modern and legacy environments. Traditionally, many APM products have focused on Java or .NET; however, many of today's applications are being written in PHP, Ruby, Python, and other languages. Again, in terms of infrastructure, it's a very hybrid world. The ability to monitor whether the application or components of the application are sitting in a public cloud, in a virtualized environment, or even on physical infrastructures is important.

Increasingly, the ability to monitor and correlate across Web and mobile apps will be required because we know that more applications are being accessed by both Web- and mobile-enabled users. Sometimes it's the same user at different times with different interfaces, and that's a very complex set of data to correlate and analyze in order to deliver on the goal of a constant user experience and consistent user service levels across all those different environments.

Q. How can APM monitoring and analytics help improve business decision making about application development investments?

A. Right now, many businesses are in the midst of creating mobile, social, and big data strategies that will let them roll out new kinds of applications and user experiences. Another layer of complexity will most likely be added to application environments as organizations increasingly invest in social, big data, and mobile functionality.

As a result, business stakeholders who don't really understand the guts of development languages and cloud and technology infrastructure will have to make some hard decisions about where to invest in terms of projects and initiatives to extend existing applications and create new business opportunities.

An APM solution that's able to provide views that can connect investments in development tools, infrastructure resources, cloud services, and mobile experiences can really help business decision makers better target their investment dollars. SaaS APM solutions that can rapidly build custom views and reports that are relevant to business stakeholders will help streamline decision making across the organization.