Application Performance Management: It's not just for IT anymore

As apps move to the cloud, IT needs to select APM tools to empower business

BY RICHARD SEELEY

Introduction

IT organizations want to move apps from on-premises to the cloud, according to a recent <u>survey</u> of application managers. This transition will require APM tools that go beyond the traditional job of making sure code is running efficiently and reliably. In the new world where cloud-based apps serve business users and customers via mobile devices and social media, more sophisticated APM is required. Tools are evolving not only to alert IT concerning performance and down-time issues but also to provide business managers insight into how mobile and social media customers are interacting with apps designed for sales and marketing.

This article explores the expanded territory covered by APM tools for the cloud. As cloud-based apps aimed at mobile and social media users proliferate, organizations need easy-to-use customized dashboards for business users in sales and marketing who will join their IT and DevOps colleagues in analyzing new types of perfor-mance data. To be useful beyond the traditional role as an IT tool, dashboards need to be customizable to provide business users with data in a form that is understandable and meaningful for them. How are mobile users interacting with apps for making reservations or ordering products? How many are becoming repeat (as in satis-fied) customers? How can the app be enhanced in the continuous DevOps cycle to assure end users' needs are met?

This is not your father's APM. Ken Godskind, chief blogger and analyst at <u>APMexaminer.com</u>, is <u>predicting</u> that the APM category could be rebranded as Unified Business Monitoring. This is an indication how quickly performance technology is evolving. Tools that in the pre-cloud era focused on how code was running are evolving into tools tracking how cloud-based, mission-critical business applications are performing from the end-user's perspective. The success of sales and reservation apps designed for customers in the mobile and social media worlds contributes directly to a company's bottom line. Sales and marketing managers need to know how well those apps are performing. This expansion of APM roles is an opportunity for IT to position itself on the leading edge of this trend, transforming from its traditional role as a cost center to become a driver of business revenue.

To succeed in this new era of APM, it is crucial for IT managers and executives to develop application performance strategies that go beyond the traditional approach.

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Begin with a holistic view

As organizations enter the new world of cloud-based applications, the first major component of any strategy needs to account for the heterogeneous nature of the environment, advises Jason Bloomberg, president of Intellyx LLC, an advisory, training, and industry analysis firm. IT and DevOps professionals as well as sales and marketing professionals need a global view of all aspects of application performance.

"It's important to remember that the cloud rarely stands alone," Bloomberg explains. "As organizations migrate various apps to the cloud, they typically implement hybrid scenarios that involve integration between on-premises and cloud resources, either as a transitional state or a permanent cloud/on-premises deployment."

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In a typical hybrid cloud deployment for sales, the apps the customers use on their mobile devices may run in the cloud but the related product and financial databases would be kept on-prem. APM users need to view the whole picture to see how the entire hybrid deployment is performing.

"APM tools must provide end-to-end visibility on-premises and in the cloud," Bloomberg says. "It is rarely sufficient to monitor and manage only those workloads in the cloud separate from the on-premises systems they integrate with."

So, a key consideration in selecting APM tools is how comprehensive is the performance views that will be provided to all those within an organization who need to know how applications are supporting business objectives.

When fixing problems is not enough

Traditional APM focused on quickly getting applications up and running again after a crash. The goal was to improve mean time to resolution (MTTR). But that may not be enough in the 24/7 world, where customers on mobile devices expect reservations and sales apps to be available any time they need them.

Doing business in the mobile device/social media-dominated market requires going beyond MTTR to mean time between failures (MTBF), says John Rakowski, who was lead analyst for APM

and IT Operational Analytics (ITOA) at Forrester Research before joining AppDynamics, where he is director of product marketing for APM and analytics.

It is still critical to resolve software problems as quickly as possible to minimize downtime of mission critical apps. But it is becoming increasingly important to focus on maximizing the time between failures.

"Once a problem occurs, you've got to be able to resolve that problem as quickly as possible and get your customers or employees up and running again," Rakowski explains. "But in today's software defined business, a good APM tool should be able to optimize mean time between failures as well. Because, essentially, if an application fails, if it's an externally facing application, that means your customers aren't engaging your organization, aren't engaging your business."

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Mobile and social media apps running in the cloud or as part of a hybrid cloud deployment are becoming the main channel of engage-ment between a business and its customers. Where application downtime once meant that an organization's employees were losing productive time internally, a mobile app crash is likely to mean loss of sales and more importantly potential loss of customers, who will find another supplier for their needs if a sales channel fails. So the job of the APM tool is no longer just to reduce the downtime but to reduce the number of times that an app is down. This requires identifying issues in code before they create performance problems that may frustrate mobile customers or worse yet result in crashes that may send potential buyers to another supplier.

"The whole point of an APM tool is to optimize mean time between failures," Rakowski argues. "To make sure that if there is an emerging issue, you can remediate that issue before it impacts business, or impacts the customer, or impacts the employee."

Dashboards: Understandable data for business users
APM is only as valuable as its data is understandable. As business users join the audience for performance data, it needs to be presented on dashboards as news they can use. This doesn't necessarily mean APM needs to be dumbed down. But most

marketing executives don't need to see bits-and-bytes level performance information on mobile apps. Sales and marketing needs a dashboard that provides metrics on how successfully customers are interacting with a mobile app for sales.

Power dashboard users are benefiting from APM applications that facilitate communication between technical teams and business users, including sales staff.

Sales and marketing professionals are increasingly looking to APM to provide analytics for e-commerce applications, according to analysts. On their dashboards, they want to see what products customers are buying, the peak times for online sales, and what devices they are using, mobile phone, tablet, or traditional PC via the Web. Also important is data on the customer experience with the app. Keeping in mind surveys that indicate customers will abandon a shopping cart if there is as little as a few seconds delay, how responsive is the software to the customers' requests?

Using analytics on customer experience and usage, marketing managers can identify key market segments and then create targeted sales programs to increase volume.

Business users working on the company's financials need a dashboard that shows the revenue generated by a mobile app. DevOps teams working in continuous release cycles need to see if enhancements are improving customer experience and adding to the revenue stream. Analytics on those customer experiences also makes it possible to tweak an app to better serve end users.

With cloud-based apps for mobile and social media proliferating, APM with customizable dashboards is becoming company-wide business software.

Looking for trouble before it finds you

Behavior learning technologies, which appear in Gartner's Hype Cycle, may transform APM from telling IT what is happening to alerting them of what may happen, especially in terms of future problems.

"APM as a monitoring entity is expanding with new sub-categories of technology that complement its demeanor," writes Larry Dragich,

Power dashboard users are benefiting from APM applications that facilitate communication between technical teams and business users.

director of Enterprise Application Services at the Auto Club Group and founder of the APM Strategies Group. "Some of these technologies will remain on the periphery; however, others will naturally become part of APM as the market is solidified. I foresee the advanced analytics and behavioral learning technologies being incorporated as product offerings from the most advanced APM solutions that are on the market today."

Once APM can learn the normal operating parameters of a cloud-based mobile app or hybrid cloud environment, behavioral learning technologies will be able to identify potential problems so fixes can be made before a failure occurs that might impact sales and revenue.

Gartner defines behavior learning engines (BLEs) as "platforms intended to enable the discovery, visualization and analysis of recurring, complex, multi-period patterns in large operational performance data sets."

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To be useful in assessing and analyzing performance, Gartner identifies four capabilities BLE needs:

1. "Variable designation" allowing an organization to customize a BLE for their cloud or hybrid cloud environment by identifying what is to be tracked and how performance data will be measured.

2. "Variable value normalization" determines, usually via an algorithm, the normal performance of apps in an environment.

3. "Observational dependency modeling" identifies the links between the moving parts in the system. Applied to APM for social and mobile apps this might in a simplified example include the performance of an on-prem database accessed via the sales app on a smartphone. Gartner notes: " ...commercially available BLEs differ significantly with regard to the degree to which the dependencies must be pre-established by the vendor or user and the degree to which the dependencies are themselves discovered by BLE algorithms working on the performance data sets being considered."

4. "Assessment" of performance based on what has been determined to be normal performance may then be used to analyze potential faults and make fixes or enhancements.

BLE offers the potential to provide very detailed assessments of performance data, according to Gartner. As this kind of tool dives deep in a system, it can identify tiny variables, which might be otherwise overlooked but might eventually create costly problems.

This is the potential that Dragich sees for BLE in APM. Algorithms could dive deep into the performance metrics and contribute to analysis that IT could use to avoid problems and DevOps could use in ongoing work to improve the experience end users are having with cloud-based apps.

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Potential productivity gains are another possible benefit of incorporating BLE into APM. Further automating the tasks of assessing and analyzing application performance issues could reduce the staff hours devoted to that work. If issues are identified and remediated in the continuing DevOps cycle it could potentially reduce time spent and revenue lost when a business-critical application fails and requires everyone to drop everything to get things back up and running. Sales and marketing staffs armed with detailed data on the efficiencies of a customer app would be free to develop strategies for boosting sales.

Internet of Things (IoT) may change everything
While the Internet of Things (IoT) may not be currently impacting application performance even in the public cloud, there seems little doubt that the proliferation of smartphones alone will increase the complexity of apps designed for mobile workers, business partners and customers.

Within five years, Gartner projects there will be more than 26 billion connected devices in the Web world. Businesses with cloud-based apps are likely to find themselves dealing with unprecedented amounts of data. Imagine a sales app needing to handle input from billions of customers and their devices.

"Another issue that many companies specifically are going to be faced with is around the massive amounts data that all of these

devices are going to produce," writes Jacob Morgan, author of <u>The Future of Work</u> in a recent Forbes <u>article on IoT</u>. "Companies need to figure out a way to store, track, analyze, and make sense of the vast amounts of data that will be generated."

This brings up a key question IT organizations need to ask APM vendors: Are you developing APM strategies and technologies to cope with the brave new world of IoT?

Seven questions when considering APM tools

In developing an APM strategy for the current disruption created by the large-scale transition to the cloud, it may be helpful to ask APM tool vendors and consultants questions, such as:

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– author Jacob Morgan, in a recent Forbes article

1. Given that a large number of organizations are expected to begin moving applications to the cloud in the next 12 months, does the APM tool provide insights into the initial migration of apps to the cloud?

2. Does the dashboard present performance data in a way that will be understandable and useable beyond IT, so business users gain insights into how cloud apps are performing and how customers are responding?

3. How detailed and meaningful is the performance data? Does the APM tool dive deep enough into the cloud to identify potential issues that could cause problems over time?

4. Is any predictive analysis available for DevOps working on a new app or enhancing an existing one?

5. How will the APM tool help sales, marketing and other business users strategize for the launch of new apps to serve mobile and social media customers?

6. Will the APM tool support mobile customers' expectations for high levels of performance?

7. How much insight can business users gain into the customer experience for cloud apps?

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APM for a new era

The current mass migration of business critical apps to the cloud, the proliferation of mobile devices as the new point-of-sale technology, and the possible IoT business revolution by 2020 all require new ways of thinking about Application Performance Management. With business users increasingly needing performance metrics, IT organizations need to consider the requirements of departments throughout their company when making decisions about APM tools and strategies.

IT needs to move from following trends and keeping up with new technologies to focusing on the future and anticipating where today's latest technology will develop new business challenges and opportunities. It is important to ask questions with a view to developing strategies that make sure today's computing environment will be up to tomorrow's demands. Where can behavior learning engines be used to enhance productivity? How will the Internet of Things change the way IT does things? The way businesses do things? What can APM do to support business users? Successfully implementing tools and strategies that leverage APM to drive bottom line priorities offers IT an opportunity to be a key player in developing and advancing business goals for a new era. ■

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