Research Report

IBM Performance Management Delivers Full Spectrum of Capabilities

Introduction

In the time that *Clabby Analytics* has been following Application Performance Management (APM), the market and range of solutions that serve the market have changed considerably. My first introduction to IBM's APM was with IBM Tivoli Composite Application Manager (ITCAM) for Application Diagnostics which provided very specific root-cause analysis into application performance issues by instrumenting applications and using agents to monitor application environments.

Early APM tools (such as IBM ITCAM) were effective but took time to deploy, added server overhead and required specific expertise to isolate performance issues. In many cases, these solutions were used to diagnose a problem after it occurred. Today's web-based, user-facing applications require an approach that enables problems to be identified proactively before the issue affects users or before the application is even deployed. As a result, vendors have entered the market offering new pricing models such as software-as-a-service (SaaS), agent-less "no-overhead" solutions, and eye-catching dashboards to display metrics and provide visual indicators of impending performance issues.

IBM's challenge has been to evolve legacy APM solutions to address the requirements of new classes of users, new types of applications, and new environments such as cloud and mobile, while still providing the ability to monitor and manage traditional applications and computing platforms such as the mainframe. To address this challenge, IBM's focus has been to link systems of record (mainframe, legacy apps) with systems of engagement (mobile, social) and systems of insight (analytics) to facilitate digital transformation. Over the past couple years, a steady stream of IBM APM announcements has resulted in:

1. Easy to order packaging and set-up
2. New pricing and sales engagement models such as SaaS (same functionality SaaS and on-premise) and free trial downloads through IBM Service Engage
3. Support for DevOps and line-of-business managers with APM solutions that are used collaboratively throughout the application lifecycle to proactively identify issues and support continuous delivery
4. Customizable role-based views and comprehensive dashboards
5. Support for cloud/ hybrid environments and mobile/ web applications
6. Predictive alerts (no threshold setting required) with IBM Operations Analytics - Predictive Insights
7. Full-suite APM including infrastructure and resource monitoring; transaction tracking; deep-dive root cause analysis; end-user/response time monitoring and; in the next release (October 2015) – synthetic monitoring and;
8. Support for 60+ environments including Oracle, SAP, OpenStack, .NET, MongoDB, Python, node.js, Ruby and IBM WAS Liberty.

In this Research Report, I will examine the APM market, IBM's Performance Management suite and upcoming 8.1.2 release, and highlight customer scenarios for IBM Performance Management. After looking at the transformation of IBM APM solutions over the last couple years and where they are today, I believe they have hit the mark. The IBM Performance Management portfolio provides solutions that can serve the performance monitoring and management needs of both their traditional enterprise customer base, as well as new customers that are looking to deploy and scale applications quickly in a range of computing environments.

APM Today

In order to respond to market dynamics, APM vendors have had to add new capabilities to existing solutions or introduce new, complementary products. These trends have also led to new vendors entering the market. There are several dynamics in the market that have contributed to the evolution of APM.

1) *Digital Transformation* - with users increasingly engaging with companies and brands via digital channels including mobile, web and social, the businesses that serve this new generation of users must respond by offering new products and services via digital channels. Application performance is extremely important for digital applications since customers have a much broader range of options when they engage digitally. According to KISSmetrics, 47% of consumers expect a web page to load in 2 seconds or less and 40% abandon websites that take more than 3 seconds to load.

2) *New Classes of Users*- With increased collaboration between development and operations teams (DevOps) and Agile development methodologies, organizations need APM tools that can be used across the application development lifecycle, fixing potential performance problems even before an application is released. And with so many more applications acting as as 'systems of engagement", line-of-business owners are stakeholders too.

3) *Start Small, Scale Quickly* – Today's web-based businesses can start small but may also need to grow very quickly to respond to market demand. These start-up businesses need a pricing and implementation model that enables them to "pay-as-they-grow" and get started quickly with a solution that is easy to deploy and has a short time-to-value.

4) *Analytics* – Analytics are becoming an increasingly important tool to support proactive management. By collecting operational data from a wide variety of sources, predictive insight can be gained so that problems can be identified and fixed before affecting users.

5) *New Environments* – With the rapid adoption of cloud and hybrid cloud and growth in mobile and social, APM tools need to provide the ability to monitor and manage these new applications as well as collect and analyze data from new sources.

6) *Ease of use* – With line-of-business managers as stakeholders, there is increased emphasis on ease-of-use. As a result, vendors have introduced new consolidated dashboards that display performance metrics from a single screen and offer easy drill-down to identify the root cause of performance issues. In addition, many vendors offer role-based views that can be customized to provide a specific set of information relevant to the user.
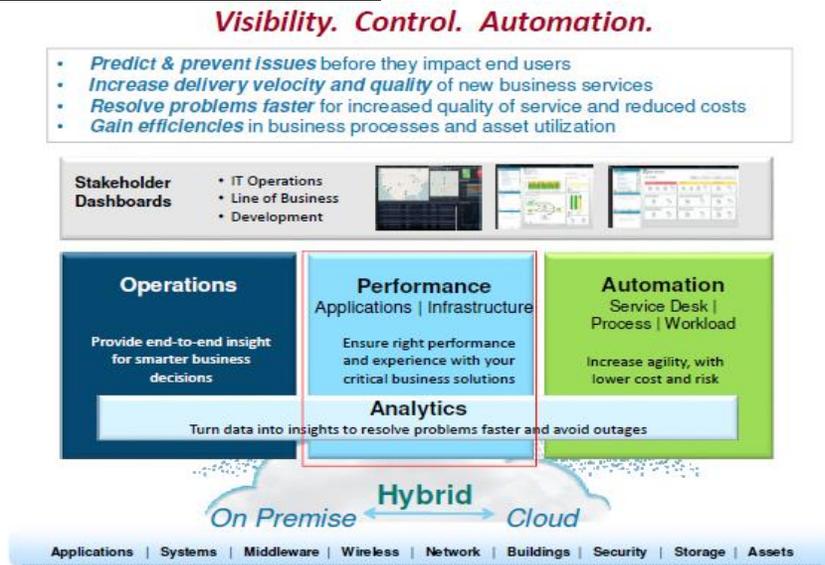
IBM Performance Management
The Strategy
The IBM Performance Management suite reinforces IBM's commitment to (1) Visibility (2) Control and (3) Automation. Customized stakeholder dashboards provide improved visibility and business insight by comparing and contrasting key performance indicators (KPI's) and business metrics across time periods and domains with comprehensive reporting and dashboards. Monitoring and root-cause analysis offer increased control over application performance, speed problem resolution and improve resource utilization.

Predictive self-learning analytics using machine-learning algorithms automate the process of identifying "normal" and "abnormal" behavior. As a result, anomalies are easily identified without requiring manual threshold setting. With this early warning of impending problems, IBM reports that outages can be reduced by as much as 50% – and administrative efficiency and application quality are improved. See **_Figure 1_**, below.
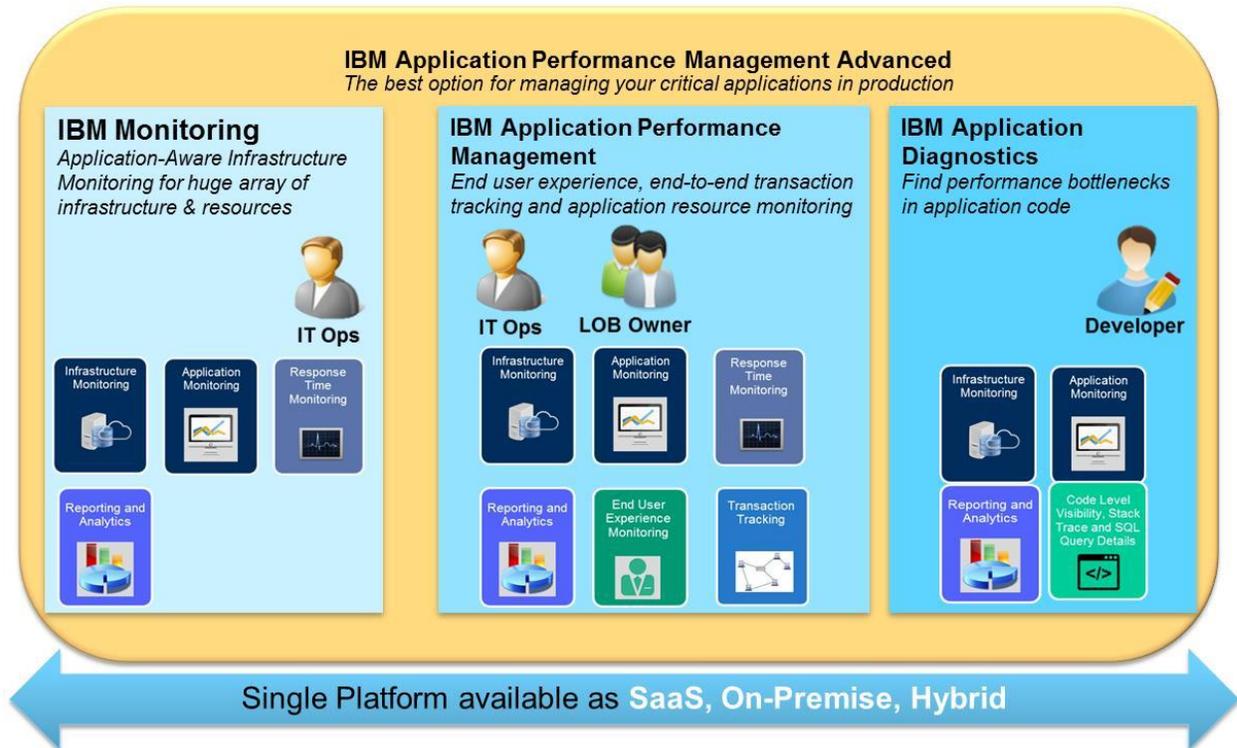
Figure 1 –IBM Performance Management

Source: IBM

One of the compelling aspects of IBM's Performance Management portfolio is its "hybrid" nature. IBM has a "hybrid" offering – that is, a solution available either on-premise or as SaaS (same features in both). From a single dashboard, users get an end-to-end view of "hybrid" web, mobile and enterprise applications that may span across "hybrid" cloud and on-premise infrastructure. Customers can choose a SaaS model for dynamic environments such as development and test and use the on-premise version for production applications, all of which can be managed from a single unified dashboard.

IBM Performance Management – Products and Packaging
The IBM Performance Management portfolio includes IBM Monitoring, IBM Application Performance Management (IBM APM), IBM Application Diagnostics and IBM Application Performance Management Advanced (Includes IBM APM and IBM Application Diagnostics). Predictive analytics are integrated across the portfolio (See **_Figure 2,_** next page):

Figure 2 - IBM Performance Management Packaging

- *IBM Monitoring* - response time, application and infrastructure resource monitoring identifies slow transactions, resolves capacity issues and prevents outages.
- *IBM Application Performance Management* – includes all capabilities of IBM Monitoring and adds end user experience monitoring and transaction tracking (100% of transactions) to isolate problems more quickly – before they impact users. For example, a time series chart illustrates both client total time and server response time, enabling administrators to determine whether the browser or the server is impacting performance. Another key metric is the "Satisfaction" score for every transaction, a user experience KPI based on the number of requests that fail or exceed a predetermined slow threshold; and
- *IBM Application Diagnostics*- provides code level visibility into applications and the health of application servers to identify performance bottlenecks in application code including stack trace details and SQL query response time and details. Using log and metric search, problems are diagnosed and "line-of-code" root cause is identified up to 90% faster, IBM reports.

Next Release IBM APM 8.1.2 -October 2015 New Features

- *Enhanced end-to-end transaction tracking for IBM Middleware stack-* WAS, MQ and IIB/MB for a 60-90% improvement in availability, according to IBM.
- *Additional monitoring -*CentOS, Debian, Scientific Linux, MSCS, and Cisco UCS

- *SAP HANA Monitoring* (December 2015) - extends end-to-end monitoring of SAP environments to troubleshoot and provide quick resolution of HANA database issues; and
- *Global 24x7 website and mobile application monitoring service*- synthetic monitoring of transactions executed near end-users (via IBM SoftLayer) helping administrators easily identify geographical variations and isolate problem areas.

IBM Service Engage

IBM Service Engage, built on IBM's global SoftLayer cloud platform and provides an on-line portal/community for learning (videos, blogs), viewing (screen shots, live demos) trying (free 30 day trial deployed in 30 minutes) and buying IBM's systems management solutions (including IBM's Performance Management portfolio of solutions) as-a-service.

According to IBM, this digital engagement/delivery model lowers TCO by as much as 50% while providing a forum for users to give product feedback directly to IBM development.

Customer Scenarios/Use Cases

Hybrid APM

A large retail pharmaceutical company uses IBM APM on-premise agents for production applications together with cloud-based agents for seasonal applications (such as the flu application) all monitored through IBM SaaS APM. The seasonal flu application runs as-a-service in the cloud while ticketing and event management runs on-premise. With IBM APM, the customer has a single integrated view of performance in all applications across hybrid, cloud and on-premise infrastructure.

Business Insight

Consolidated Communications uses IBM APM to monitor 250k access lines, 125k internet, and 30k video, replacing manual thresholds with IBM Operations Analytics - Predictive Insights behavioral learning. Alerts are automatically generated when behavior is deemed abnormal, providing intelligence about possible failures and enabling earlier problem detection and resolution.

DevOps

Kaiser Permanente, a leading healthcare provider, needed to improve application response time of code developed, requiring better collaboration between operations and development. With IBM APM, developers were able to get a better understanding of transaction flow and response time before releasing code. As a result of this effort, they were able to improve response time by 90%.

Summary Observations

In my briefing, I learned that the overall SaaS APM market is growing faster than on-premise – and this is helping IBM attract new customers. I really like IBM's "hybrid" approach. By offering tight integration and a common UI, the solution appeals to both the existing customer base as well as new customers.

The Service Engage portal, new features (such as synthetic monitoring) and new environments (such as PHP, OpenStack, node.js, Ruby, Cloud Foundry, MongoDB,

PostgreSQL and others), and a quick time-to-value enable IBM to compete with vendors entering the market. On the flip side, an active Tivoli user community ensures that the portfolio evolves to improve support and performance in traditional environments such as SAP and IBM's middleware stack.

Analytics has always been a strong suit of IBM's and the Performance Management portfolio is no exception. Self-learning and automation (such as threshold setting) enables proactive management throughout the product lifecycle and enables new classes of users and smaller businesses with less-skilled workers to find and fix problems more quickly.

IBM's broad integrated, portfolio of capabilities, choice of delivery models and analytics-based management will all contribute to continued success in the growing APM market.

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