Improving the Usability of APM Data: Essential Capabilities and Benefits

Introduction

A troublesome if not surprising statistic is that, despite it being the second most often mentioned challenge of APM, nearly 60% of organizations report a success rate of less than half when it comes to preventing performance issues from impacting end-users. This means that most of the time, end-user experience is suffering from performance anomalies that could have been prevented. Instead, these issues must be dealt with after the fact, resulting in an average of 46.2 hours spend each month in "war-room" scenarios. In a positive trend, end-user organizations have recently begun investing in next-generation APM tools, and as a result are able to collect more data. However, many organizations are finding that some of the key capabilities are built around making the best use of this data and turning it into actionable information.

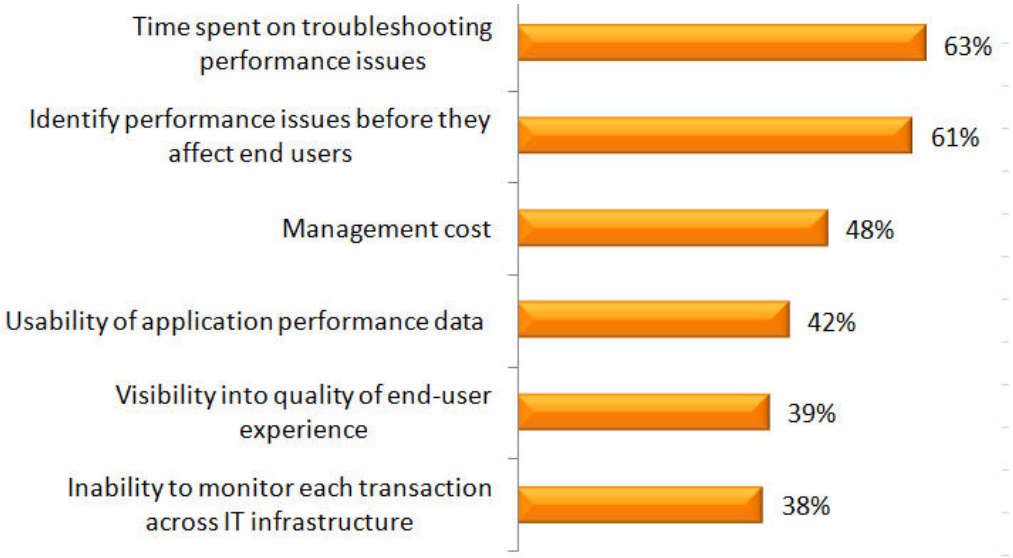
This report will highlight some emerging trends in the APM market that enable organizations to make the best use of APM data, and will discuss which best practices are necessary for analyzing APM data and presenting it back to IT teams in a useful and actionable way, allowing them to effectively deal with key challenges for managing application performance. The report will also explore the benefits reaped when these practices are implemented.

Key Challenges

Organizations that participated in TRAC's September 2011 research identified the amount of time spent troubleshooting performance issues as their top challenge (Figure 1). On average, over a full work-week of man-hours are spent in war-room situations each month, diminishing the productivity of valuable employees and resulting in a huge detriment to resource availability.

Secondly, the ability to identify issues before they impact the user is mission-critical. From an over-arching perspective, the purpose of Application Performance Management is to detect and rectify anomalies before they affect the experience of the end-user. Once an issue is raised by an end-user, any APM solution has effectively failed.

Figure 1: Key Challenges for Managing Application Performance



Source: TRAC Research, September 2011

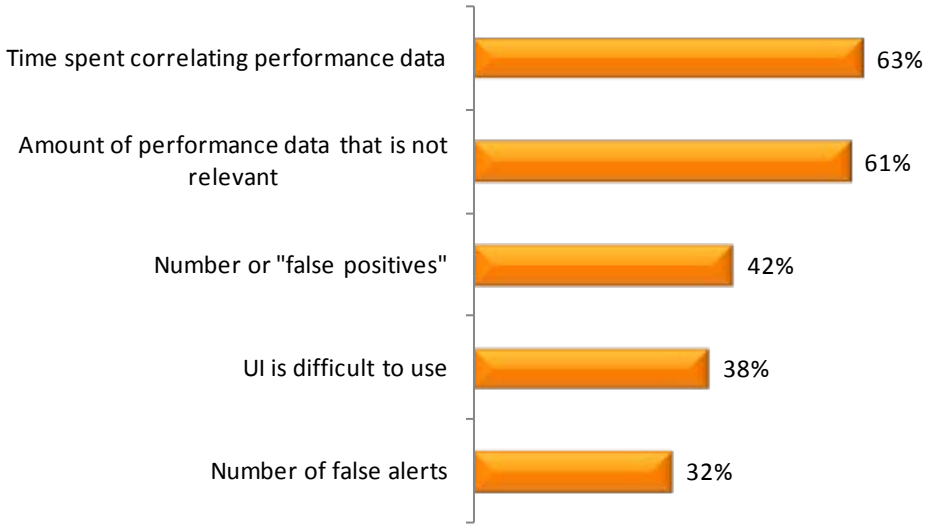
Even though organizations that participated in the research have deployed APM solutions, many of them are still failing to achieve their key goals. A major reason for this is that the usability of the data they have on hand is often questionable.

Where usability of performance data is concerned, end-user organizations reported five key challenges. Figure 2 shows that the amount of time spent on correlating performance data is an issue for 63% of organizations that participated in the research. Many are deploying a number of different tools for addressing different IT domains. The performance data collected by these is relevant for managing application performance, but the majority of these tools are not able to talk to each other, leaving organizations to deal with huge amounts of raw and unrelated data. This means that someone needs to spend hours determining what sections are relevant to the operation.

This brings us to the next challenge: the sheer amount of irrelevant performance data. 61% of respondents cited irrelevant data as a top challenge. Organizations have to ensure that the information is presented in a way that helps to solve the performance problem. For example, organizations need to ensure that the workflows of their APM solutions align with the needs of specific job roles in charge of application performance, and that advanced analytics or reporting metrics allow organizations to quickly locate relevant data among the huge amounts of information available. As the majority of organizations are reporting that the time spent on troubleshooting is the key challenge for APM, the ideal solution would enable them to accelerate the process of root cause analysis and rectification.

Two other major areas of concern are the number of false-positives and false alarms (cited by 42% and 32% of respondents, respectively). If a solution is showing green lights across the board when in reality a service anomaly has occurred, the end-user will be impacted and IT might not even be aware that there is a problem. This decreases the credibility of the IT team and negatively impacts key business goals such as brand recognition, revenue growth and customer satisfaction. Similarly, false alarms will elicit immediate attention, but can also lead to a scramble to isolate a nonexistent issue. More dangerously, they could cause complacency in monitoring through a distrust of the APM tool; a classic "boy who cried wolf" scenario develops as more and more accurate alarms could end up being ignored by IT staff.

Figure 2: Key Challenges for Improving Usability of APM Data



Source: TRAC Research, September 2011

Key Capabilities Needed

TRAC's research shows that in order to effectively address key challenges for managing application performance, organizations need to develop a set of APM analytic and reporting capabilities to improve usability of APM data. Once developed, these capabilities enable IT staff to address key APM challenges and be better able to identify and resolve anomalies before end-users are impacted. .

- *59% of organizations reported the success rate in preventing performance issues before users are impacted to be lower than 50%*
- *On average, 46.2 man hours are spent on "war room" meetings per month*

- **Automated detection of performance anomalies.** Traditionally, performance levels are monitored by IT based on a set goal or service level objective. With automated anomaly detection, APM solutions can actively identify performance issues with minimal IT involvement. More importantly, this capability allows organizations to make educated decisions about managing application performance based on ongoing learning of end-user usage patterns, enabling them to more effectively deal with changes in application environments.

- **Predictive analytics for application performance monitoring**. Organizations are increasingly applying some advanced business intelligence (BI) concepts to application performance management. APM solutions with built-in predictive analytics enable with a more effective approach towards dealing with changes in their application environments by conducting a "what-if" analysis of how their actions around management of business-critical applications can impact user experience, and 'by detecting the trends or sub-threshold anomalies that are precursors to developing performance issues. These capabilities allow organizations to be more proactive in identifying and resolving issues before they impact business users.

- **Root cause analysis based on correlating data about different aspects of the application delivery chain (network, server, database, etc.).** Many APM solutions include both capabilities for monitoring application transactions across different elements of the application delivery chain, as well as a variety of IT management tools. However, very few of these solutions allow organizations to capture in-depth information about each of these elements. Additionally, some organizations are using many different APM solutions to assist them with individual APM pain points such as Java monitoring, deep dive analysis, mainframe-wide transaction monitoring, etc. As a result, organizations are challenged with correlating this data from different resources, and capitalizing on synergies of monitoring applications from different aspects. As a result, organizations are increasingly deploying platforms that integrate data from different sources, applying advanced analytics and enabling faster and more accurate discovery of performance issues.

- **Customizable views into performance data.** This capability increases the value of APM solutions by ensuring customizable reporting capabilities, allowing data to be specifically tailored to individual job roles and focus areas. Organizations are able to drill down on specific metrics, and create customizable reports, better aligning APM solutions to the needs of the IT management staff. Additionally, it allows laser focus on the issue at hand, without spending time filtering out irrelevant data. Many new-generation solutions even allow for customization of the metrics hat are collected, as opposed to the traditional method of requesting

enhancement from vendors. These enhancements allow IT to deliver the right data to the right people at the right time.

Operational and Business Benefits

Research shows that those organizations that are able to improve usability of APM data experienced some measurable operational and business benefits. These benefits can be summarized as following:

- **Improved success rate in preventing performance issues before users are impacted.** The research shows that organizations that are applying predictive analytic capabilities for managing application performance are nearly two times more likely to be able to prevent performance issues as compared to their peers operating without this capability.

- **Reduced time spent of isolating the root cause of performance issues.** Organizations are reporting that the majority of time needed for repairing application performance issues is spent on isolating the root cause. Improving the ability to deal with key challenges for usability of APM data (Figure 2) allows organizations to identify underlying issues more quickly, reducing the time that IT staff needs to spend in "war room" meetings.

- **Improved ability to launch new business services.** Organizations that can improve the usability of APM data are better able to seamlessly launch new services, creating business value for their organizations. This can be accomplished in two different ways: 1) by reducing time that is spent on dealing with performance problems and "keeping the lights on", resources can be dedicated to designing and launching new services; 2) by applying advanced capabilities for predicting performance levels and identifying performance anomalies, organizations are able to identify potential bottlenecks and resolve them before new services are launched.

- **Reduced cost of IT operations.** Improving usability of performance data allows organizations to reduce the cost of IT operations by allowing more end-user support with fewer staff, and to make more educated decisions about their investments in infrastructure and services.

Summary

Usability of application performance data has become one of the key challenges of APM. Organizations increasingly understand that having more data on hand doesn't necessarily increase visibility or result in a more effective in management of application performance. Rather than seek more data, users are looking for APM vendors to provide capabilities that will help them turn APM data into truly actionable information that is relevant to the issues they need to understand and address. Some APM vendors are currently capitalizing on this need for relevant data by offering customers the ability to customize views or define new metrics for ad-hoc analysis.
Organizations that have already put these types of capabilities in place find themselves better equipped to address key challenges of managing application performance, and go on to experience measurable business benefits. These leading organizations are able to baster identify a performance issue's root cause, and are better able to allocate to IT resources that add business value, such as the launching of new services.

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