The Rise of AIOps Platforms
How Data, Machine Learning, and AI Will Transform Performance Monitoring
Over the last decade, application environments have exploded in complexity.

Gone are the days of managing monoliths. Today’s IT professionals are tasked with ensuring the performance and reliability of distributed systems across virtualized and multi-cloud environments. And while it may be true that the emergence of this modern application environment has given leaders the speed and flexibility they demand, the multiplicity of services have unleashed a deluge of data on the enterprise IT environment.

Application performance monitoring (APM) solutions have proven essential in helping leaders take back control by providing the real-time insights needed to take action. But as the volume of data in IT ecosystems increases, many professionals are finding it challenging to take a proactive approach to managing resources, capacity, storage, and security. While automating tasks like these have absolutely helped teams free up bandwidth for operations and planning tasks, automation alone is no match for today’s increasingly complex environments. What’s needed is a strategy focused on reducing the burden of mounting IT operations responsibilities.

So, what are forward-thinking IT leaders doing to stay ahead of the curve?

They’re applying an AIOps mindset to the challenge of application environment complexity. Rather than reacting to problems that arise, they’re proactively solving for them using predictive insights gleaned from their own environment. Even though this phenomenon is relatively nascent, the approach is gathering momentum.

And for good reason: Leveraging AI to identify potential challenges within the application environment doesn’t just help IT professionals get ahead of problems -- it helps companies avoid revenue-impacting outages that jeopardize the end user experience, the business, and the brand.
In order to understand why this AIOps mindset has developed the momentum it has, we wanted to dig deeper to uncover the challenges faced by IT professionals, and how they’re managing them in an increasingly complex application environment. To accomplish that, AppDynamics undertook a global study of 6,000 IT leaders in Australia, Canada, France, Germany, the UK, and the US. Their responses helped us dig deeper into the challenges faced by IT professionals, and answer three key, macro-level questions about this shift in the performance space,

01
What’s the current enterprise approach to managing increasing application environment complexity?

02
How are IT leaders taking a proactive approach to identifying problems in the application environment?

03
How broadly is AI identified as a potential solution to reducing complexity in IT ecosystems?

Let’s dig into some of the key discoveries.
The Demand for a More Proactive Approach to APM

Today, midsize to large companies use an average of eight different cloud providers for various enterprise applications and services. As a result, IT professionals are managing an ever-increasing set of tasks that have the potential to become disconnected if not managed properly. What’s more, within these highly distributed systems, IT leaders must grapple with the impact of new code being deployed, as well as the virtually infinite potential outcomes associated with doing so. Without a unified view of how all of these elements interact, there’s significant potential for issues to arise that impact performance—and, ultimately—the customer experience.

AppDynamics research underscores the cause for concern: 48% of enterprises surveyed say they’re releasing new features or code at least monthly, but their current approach to monitoring only provides a siloed view on the quality and impact of each release. In fact, of those enterprises that release on that cadence, a massive 91% say that monitoring tools only provide data on how each release drives the performance of their own area of responsibility (e.g., storage, DBs).
Should these findings raise eyebrows? Absolutely.

In the best case scenario, this research indicates that a holistic view of business and customer value is difficult and time-consuming for many IT teams. At worst, it points to a much larger problem: That a unified view of application performance within a variety of scenarios isn’t possible. And that puts modern best-in-class software development practices like continuous delivery at serious risk.

But that’s where leveraging data about the application environment to predict outcomes can make a massive difference. With machine learning and AI, it’s now possible for IT ecosystems to not just ingest data from every dimension of the application environment, but leverage it for a more proactive approach to APM, and a reduction in the burden on IT operations.

And, by all accounts, that’s what most global leaders want.

According to research findings from AppDynamics, 74% of IT professionals surveyed said they want to use monitoring and analytics tools proactively to detect emerging business-impacting issues, optimize user experience, and drive business outcomes like revenue and conversion. But according to our research, 42% of respondents are still using monitoring and analytics tools to find and resolve technical issues. There’s indication, however, that this approach is extremely problematic for businesses. Beyond a serving as a pain point for IT professionals in terms of capacity and resource planning, reactive monitoring—in some cases—can cost businesses hundreds of thousands of dollars in lost revenue.

74% of IT professionals say they want to use monitoring and analytics tools proactively
How Reactive Monitoring Hurts Performance, Revenue, and Brand

From e-commerce to banking, booking flights to watching movies on Netflix, applications have proliferated people’s lives. As a result, consumers have high expectations for application performance that businesses must deliver on. If not, they risk jeopardizing brand loyalty and, as our research revealed, their bottom line.

IT leaders have long relied on the mean time to repair (MTTR) metric to evaluate the overall health of an application environment. The longer it takes to resolve an issue, the greater the potential for it to turn into a significant business problem, particularly in an increasingly fast-paced digital world. However, in our latest research, we made a startling discovery: Most organizations are grappling with a high average MTTR: Respondents reported that it took an average of 1 business day, or seven hours, to resolve a system-wide issue.

“As the broader technology landscape undergoes its own dramatic change, forcing businesses to double down on their customer focus, managing the performance of applications has never been more critical to the bottom line.”

Jason Bloomberg
The Rebirth of Application Performance Management
But that wasn’t the most alarming finding.

AppDynamics research also revealed many enterprise companies weren’t notified about performance issues via monitoring tools at all. In fact:

- **58%** find out from users calling or emailing their organization’s help desk
- **55%** find out from an executive or non-IT team member at their company who alerts the IT department
- **38%** find out from users posting on social networks
To fully appreciate the impact of 7 hour MTTR on a business, AppDynamics asked survey respondents to report the total number of dollars lost during an hour-long outage, and used that figure to determine the typical cost of an average, day-long outage.

$402,542 USD

Average cost of a single service outage in the United States

$212,254 USD*

Average cost of a single service outage in the United Kingdom

*or £168,496.54
It’s important to note that these figures reflect the total cost for a single outage in the enterprise—yet a substantial 97% of IT professionals surveyed said they’d had performance issues related to business-critical applications in the last six months alone.

In addition to the impact on a company’s bottom line, global IT leaders reported that reactive performance monitoring had created stressful war room situations and damaged their brand. 36% said they had to pull developers and other teams off other work to analyze and fix problems as they presented themselves, and nearly a quarter of respondents said slow root cause analyses drained resources.

The takeaway here is clear: IT leaders need to build a more proactive approach to APM in order to lower MTTR and protect their bottom line. But in today’s increasingly complex application environment, that’s easier said than done.

Unless, of course, you’re developing an AIOps strategy to manage it.
The Risk of Not Adopting an AIOps Strategy

AppDynamics research showed that the overwhelming majority of IT professionals want a more proactive approach to APM, but one of the main ways of achieving that—through the adoption of an AIOps strategy—isn’t being widely pursued by global IT teams in the near-term.

In fact, the IT professionals AppDynamics surveyed reported that although they believe AIOps will be critical to their monitoring strategy, only 15% identified it as a top priority for their business in the next two years. What’s more, the capabilities that respondents identified as essential to APM in the next 5 years are precisely those that AIOps has the potential to help provide. For example:

**Intelligent alerting that can be trusted to indicate an emerging issue.**

49% of respondents identified this feature as core to their performance monitoring capabilities in the next five years. By ingesting data from any application environment, AIOps technology can play a pivotal role in not just automating existing IT tasks, but identifying and managing new ones based on potential problems detected in the application environment.

**Automated root cause analysis and business impact assessment.**

44% of respondents said solving problems quickly and understanding their impact on the business would play a crucial part of their performance management in the years ahead. With the help of AIOps technology, this can be achieved, providing increased agility in the face of potential service disruptions or threats, and without additional drain on resources.

**Automated remediation for common issues**

42% of survey respondents said that they needed to build automated remediation into their strategy for performance monitoring. With AIOps technology, it’s easy to not only automate remediation for known issues, but unknown issues, too. That’s because it not only ingests data from your application environment, but gets smarter as a result of it.
Conclusion

Despite increasingly complex application environments, few of the enterprise companies surveyed are prioritizing the development of an AIOps strategy, which would allow them to proactively identify issues before they become system-wide problems. Instead, IT professionals report an average MTTR rate that hovers at a full business day, and has the potential to cost companies hundreds of thousands of dollars in lost revenue.

What's more, AppDynamics research findings also make it clear that many enterprise IT teams are struggling to integrate monitoring activities into the purview of the broader business. This can cause significant delays in MTTR, as noted, as well as make companies vulnerable to service disruptions that can cause irreparable harm to the customer experience, and the enterprise as a whole.

While IT leaders have expressed a desire for a more proactive approach to monitoring, this research indicates that there's still plenty of work to be done on numerous fronts. But the first step is clear: IT leaders must prioritize the development of an AIOps strategy. In doing so, they'll start to simplify the demands of an increasingly complex application environment, and build a stronger connection from IT to the business as a whole.

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Sources