6 Myths of AIOps **Debunked**

How to cut through the hype and find real business value with machine learning, automation and predictive analytics

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Imagine you're the mythological character Sisyphus, forced to roll a boulder up a hill. When it gets near the top, it always rolls back down, so you have to keep repeating the same futile exercise over and over. If you're an IT professional in charge of a complex, hybrid environment, this scenario probably sounds familiar. Instead of helping move your organization forward, you spend most of your time constantly trying to pinpoint and fix one problem after another (eternally rolling boulders uphill). Adding to the stress, all the pressure is on you to maintain system availability and performance to keep business leaders and customers happy.

You're not alone. Across the world, IT professionals are in charge of an increasing number of servers and data coming in from disparate sources, and they're using way too many monitoring tools to make sense of it all. The 2018 report Reducing Complexity in IT Infrastructure Monitoring: A Study of Global Organizations by the Ponemon Institute sheds light on the challenges of troubleshooting and monitoring cloud and on-premises environments. The Ponemon Institute polled 2,497 IT and IT security practitioners in the United States, the United Kingdom, Germany, France, Australia, Singapore and Japan about their infrastructure monitoring challenges.

AIOps brings unprecedented capabilities to help you do your job better while also improving your job satisfaction. But if you want to set off on the right path, you need to be careful what (and who) you believe.

It's All About the Data

You've heard it before. You live it on a daily basis. There has never been this much data and it's growing faster than ever. It's easy to understand the data explosion; knowing what to do about it is harder. AIOps is a real, concrete, powerful tool to manage the enormous volumes of data you need to wrangle in IT operations so you can start to achieve the benefits of digital transformation.

Consumer demands for applications increased exponentially with the massive adoption of mobile phones and high-speed internet. The deluge of applications designed to meet this demand brought larger-scale and more complex application deployment models, as well as bigger headaches for IT departments charged with managing and maintaining these systems, often with traditional (and outdated) methods and tools. Existing tooling just wasn't designed to handle the exploding volumes of data and increased complexity of data types. We've hit a wall of sorts.

What Exactly Is AIOps?

AIOps applies data, analytics and machine learning to automate IT operations. These new learning systems can analyze massive amounts of network and machine data

AIOps will augment existing IT systems and better equip IT pros to handle growth and complexity.

to find patterns not always identified by human operators. These patterns can both identify the cause of existing problems and predict future impacts. The ultimate goal of AIOps is to automate routine practices in order to increase accuracy and speed of issue recognition, enabling IT staff to more effectively meet increasing demands.

Gartner coined the term AIOps to combine the concept of artificial intelligence (AI) and machine learning with the practice of IT Operations. AIOps depends on three primary ingredients:

- **Data.** Start with lots and lots of data from the broadest variety of sources, ranging from IT infrastructure to the business outcomes it supports.
- **Math and Analytics.** Machine learning and AI are rooted in mathematical algorithms that were first primarily applied in the manufacturing space. Now they're being applied to business-transformation use cases to find the hidden value of all that data.
- **Automation.** With more data and properly applied analytics, better conclusions can be drawn from rapidly changing circumstances in the business. The ultimate goal is to trigger the correct automated response based on those conclusions — to do what your smart people would have done had they been required to get involved in the situation.

Everyone — network planners, IT directors, end users, vendors, analysts — is looking for the Holy Grail: a solution that will turn vast amounts of data into operational insights and automate mundane tasks. IT organizations are looking to AIOps to reduce alert noise, predict outages and give them 360-degree visibility into issues impacting customers.

With so much at stake, **it's not surprising to see some wild claims and unsustainable promises.** The hype machine builds upon itself as vendors try to make their solutions sound more intelligent, more powerful and more valuable than their competitors' offerings. At Splunk, we believe in the power of AIOps. In fact, machine learning was core to our platform from the beginning. We also believe our customers and community are smart enough to see through the hype. A lot of what you hear and read about AIOps is true. A lot isn't. With that in mind, let's take a look at six of the most common myths of AI Ops.

01 MYTH

AIOps Will Replace IT Professionals

Reality: AIOps will augment existing IT systems and better equip IT pros to handle growth and complexity.

One misconception around AIOps is that these platforms are intended to replace people in the organization with intelligent software systems. Now and for the foreseeable future, there is no substitute for the knowledge and adaptability of human operators and engineers. While some employee attrition could be possible, implementation of AIOps platforms will be done to augment the capacity of existing IT departments, taking on repetitive or well-understood tasks and leaving IT professionals free not only to solve more complex problems, but also to plan and innovate. In other words, **AIOps adds much-needed "slack" to the system, to give teams precious time needed to work on longstanding projects that otherwise never seem to receive attention.**

AIOps can alleviate the problem of alert fatigue (a.k.a. alarm storms) when teams see a particular alert that so often turns out to be trivial that they ignore it when it's important. In most complex systems, alerts are fairly constant. The problem with traditional IT tools, however, is that they don't provide insights into the problem, just a storm of warnings.

AIOps automatically groups notable events based on their similarity. Grouping similar events reduces unnecessary event traffic and noise, and therefore the burden on IT teams.

These systems, particularly in early implementations, will lean heavily on IT operators to define appropriate parameters, feed correct data streams and guide the system on desired outcomes. As AIOps platforms learn, they'll be able to identify and resolve more and more common issues.

By eliminating mundane tasks and handling routine system alerts, AIOps solutions will improve the focus and working capacity of existing IT professionals, which they can use to adopt the next generation of technologies to drive customer value and business growth.

02 MYTH

AIOps Is All About Artificial Intelligence

Reality: AIOps uses a combination of machine learning and automation to deliver more effective operations.

Debates rage on about the definition of "true AI" and how it can be qualified. That debate does not need to be a part of an AIOps platform discussion. An AIOps platform must have the following capabilities:

1. Ingest a diverse set of data
2. Apply rich algorithms to identify key indicators in the data
3. Notify and respond to those indicators when they are identified

Throughout this process, **the platform should continue to learn and become more adept not just at identifying issues, but in predicting issues before they happen.** As the platform gathers more data on specific issues and the correct way to respond, it's able to automatically respond to more and more issues without a human being needing to be involved. As more intelligent machine learning systems evolve that resemble true artificial intelligence, the model will continue to learn and be able to perform more complex functions independently.

Take for example a server that tends to run out of disk space every few weeks during high-volume periods due to known issue logging. In a typical situation, an IT admin would be tasked with logging in, checking for normal behavior, cleaning up the excessive logs, freeing up disk space and confirming nominal performance has resumed.

These steps could be automated so that an incident is created and responders are notified only if normal responses have already been tried and have not remedied the situation. Possible actions for these platforms can range from the simple, like restarting a service or taking a server out of load-balancer pools, to more sophisticated, like backing out a recent change or rebuilding a server (container or otherwise).

The real long-term value of AIOps lies in how the platforms can apply learned issue identification and remediation to systems that weren't in the original scope. Once a scenario has been identified and the remediation automated, an AIOps platform can monitor new systems the same way, without requiring administration time.

03 MYTH

AIOps Is Plug and Play

Reality: While many AIOps solutions can deliver quick value, there is still human effort required to fit the platform to the environment.

An AIOps platform can only be as good as the IT professionals who implement it. You need engineers to monitor the data being fed into the platform, understand the criticality of the applications and systems and ensure the automated workflows will be effective. Obviously, you can't get that level of experience straight out of the box.

For example, if one server in a pool of three machines encounters problems during a normal load period, the risk to the overall service may be considered low, and the server can be taken offline without any user-facing impact. Conversely, if the same thing were to happen during a high load period, an automated decision could be taken to add new capacity before taking any poor-performing systems offline in order to maintain service level objectives. IT pros will outline these initial responses, which will provide the AIOps platform with foundational knowledge from which it can build and become increasingly independent over time. As it ingests and analyzes more data, the system will eventually be able to recommend more efficient and effective responses.

Ultimately, the true value of an AIOps platform is its ability to make human-quality decisions without a human needing to be directly involved. This requires smart algorithms written, trained and refined by smart people. As AIOps systems become more common they will also become more independent, as they acquire a larger pool of collective knowledge about application and system behavior across a diverse set of environments.

04 MYTH

AIOps Means You Can Relax and Trust the Machines

Reality: IT practitioners and leaders need to build a strong foundation before fully automating responses and reporting.

AIOps systems can do incredible things human operators can't. They see patterns in noise. Their ability to parse and correlate tremendous amounts of data, deduplicate logs and notifications at large scale and to execute automated responses exceed any human capacity. **This does not mean they're infallible and can be left unattended.**

AIOps systems still require IT professionals to train the systems and then validate conclusions and outputs as they learn. Again, AIOps is only as good as the people who train it and the algorithms that run it. Put in the hard work at the beginning of the process and make sure you're ingesting high-quality data, spotting inaccurate conclusions and reviewing automated response workflows. Before you can take full advantage of the capabilities of AIOps, let everyone in your organization see you've put in the effort to make sure the outcomes are trustworthy and the platform is ready for more autonomy.

Even though AIOps has the potential to improve so much of your IT operations, it's still a tool that needs to be programmed and monitored. As with any tool you rely on for mission-critical functions that directly affect customer experience and the health of your business, it's vital that you build an AIOps system that your entire organization can trust.

05 MYTH

AIOps Requires Data Scientists to Implement

Reality: Most current AIOps platforms support a large, common set of technology and processes that doesn't require data science mastery.

AIOps systems initially focus on well-understood systems and frameworks for deploying applications and managing their health. Their biggest value comes in managing the complexity and scale of systems such as distributed applications, container or virtualization stacks and complex networks. AIOps systems cluster events in these systems to identify and prioritize them. Over time these systems are able to apply what they've learned to other systems without additional input from administrators. Eventually the platform will be able to identify anomalous behavior that might otherwise go unnoticed by human operators.

Including data scientists in your AIOps adoption team will be beneficial as you mature your implementation and apply the platform to more complex applications or systems. Data scientists can also validate the output of the system in coordination with IT professionals. That being said, **curated algorithms in AIOps software help IT practitioners implement machine learning without requiring them to know all the nuances of the data science profession,** which is a large part of what makes these systems so valuable.

06 MYTH

AIOps Is Just for Operations

Reality: AIOps is a new generation of shared services for everyone involved with application development or support.

It is true that the primary beneficiary of AIOps is the IT operations team. Funding for these platforms will also likely come from the IT organization. However, the value of these platforms extends well beyond IT operations. One of the important shifts happening in the industry is the transition to delivery and support of shared services to all consumers of IT. AIOps platforms will become not just a valuable tool used by IT, but also a critical service delivered by IT. In other words, **AIOps capabilities and benefits will become available earlier in an application lifecycle, allowing teams to respond and remedy potential issues long before code ever reaches production.**

For example, a development team working on a new app needs to continually identify potential bugs or issues that could lead to unexpected resource utilization. By using an AIOps platform, the dev team can take ownership of this process, rather than having to ask IT ops for support.

With this capability they can apply their application and system knowledge to help the platform identify common issues, develop alerting and remediation processes, and make progress on bug identification earlier in the development process, ultimately accelerating delivery of new features to customers.

And the more an organization uses AIOps platforms, the more system knowledge the platform will have, enabling it to learn faster and take increasing responsibility for system availability and health, freeing up the company's most valuable employees for higher value activities. Service and application owners can use AIOps to implement new features and fixes sooner, providing value to customers more quickly.

AIOps Is Worth the Effort

AIOps is not only an immensely valuable tool for the IT department, it is the future of IT operations. Like most significant advancements in technology, AIOps will require preparation and planning to implement. Forward-thinking IT shops should see this as a perfect catalyst to drive modernization; legacy IT tools simply weren't made to handle these types of use cases. Data will continue to grow, and at an increasingly fast pace. The demands on IT professionals will grow and accelerate alongside. Whether or not AIOps platforms currently embody true AI, they certainly will in the future. Don't let the hype around AI or AIOps stop you from taking advantage of this transformative technology.

More Information on AIOps

Artificial Intelligence for IT Operations (AIOps)
Market Guide for AIOps Platforms

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