

The rapidly expanding world of cloud platforms and services — both large and small — is creating an array of options for forward-thinking organizations to deploy asset performance management solutions.

Asset Performance Management: The Importance of Operational Data and Cloud

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Questions posed by: AVEVA

Answers by: Leif Eriksen, Research Vice President, Future of Operations

Q. What is asset performance management (APM), and how is it evolving?

A. After many years of being a somewhat niche technology, APM is on the verge of becoming ubiquitous. What's more, APM is laying the foundation for the next wave of operational excellence and resilience.

Historically, the cost and resources required to implement APM broadly have made it prohibitive to all but the largest organizations. But as the ability to cost effectively scale solutions grows, organizations from a wide range of asset-intensive industries are increasingly investing in APM tools to better manage their businesses.

APM can be broadly divided into two categories: solutions that help organizations use data and analytics to optimize their maintenance activities and technology that helps predict the failure of specific assets or asset classes. Most new investments and solutions have focused on the latter — often referred to as predictive maintenance (PdM) — on the assumption that new analytical tools and techniques, including artificial intelligence and machine learning, open the door to truly predicting the performance of assets.

At its core, APM depends on data and analytics, yet many organizations are still not managing their data effectively. In IDC's 2021 *Worldwide Future of Operations Survey*, less than 30% of participants responded as follows: "We have more than enough data, and there are no significant barriers to accessibility and extracting value from it." Significantly, data masters outperformed their peers by a large margin with respect to operational performance improvements. This extends to their success in extracting new insights from data using analytical tools, such as APM.

Asset performance management monitors assets to identify, diagnose, and prioritize impending equipment problems — continuously and in real time.

Q. What are the business benefits of APM?

A. The business benefits of APM have been well established from many years of use in asset-intensive industries. The two primary benefits are reduced unplanned downtime and minimized maintenance costs. Historically, organizations were forced to make a trade-off between costs and reliability, but APM has allowed many companies to improve both. This outcome is possible when maintenance activities evolve from being time based (and often unnecessary) to being data based. This approach can also deliver reduced MRO inventory requirements.

The more transformative opportunity is to use APM as the foundation for creating a fully optimized and data-driven operation (sometimes called operations performance management, or OPM). Once organizations have a good handle on the performance of their assets, they can make better decisions on how to run their operations in terms of profitability, safety, sustainability, and customer satisfaction. APM is also a critical building block for remote monitoring and diagnostics, which has its own set of benefits.

Ultimately, APM lays the foundation for autonomous operations. Being able to predict the performance of specific assets or components that make up the whole operation is a necessary condition for ensuring that a company can safely and reliably run its operations autonomously. Indeed, there is no safe and reliable path to autonomous operations without APM as part of the journey.

Q. How is cloud technology transforming the APM market?

A. Most APM deployments have been — and still are — on premises. However, this is changing. Long-standing concerns about putting operational data and applications in the cloud, including security and reliability of access, have been largely addressed. Indeed, data is often more secure and accessible in the cloud.

IDC's 2021 *Worldwide Future of Operations Survey* asked about attitudes toward cloud, specifically relating to operational data. The findings revealed a decisive shift, with less than 17% of participants responding as follows: "We do not allow any operational data to be put in the cloud for security reasons."

At the other end of the spectrum, almost a quarter of respondents agreed with the following statement: "We have an enterprisewide strategy to put more data in the cloud to enable more information sharing and collaboration." The rest — about half — fell somewhere in between.

Most importantly, the business value of putting operational data in the cloud was strongly supported by the survey. There were strong positive correlations between having an enterprise strategy to put operational data in the cloud and improved decision making, improved collaboration, and better success with artificial intelligence/machine learning projects. This was reflected in the amount of operational data that organizations already stored in the cloud. This finding points to accelerated deployments of APM in the cloud as well as greater adoption by a broader cross-section of industries and organizations.

Q. What are the characteristics of a successful APM strategy? What are the dos and don'ts?

A. APM is foundational, and the barriers to deploying it have dropped significantly. However, there is still a premium on creating an effective APM strategy and successfully executing it. The keys to success are:

- » **Become a master of your operational data before starting with APM.** This includes understanding what you have as well as developing an effective approach to data aggregation, normalization, and contextualization. Many organizations start an APM project assuming they have the data they need, but too often they discover critical gaps — whether lack of data or data quality/access issues. The global proliferation of IIoT devices also provides companies with an opportunity to increase data capturing automation and close data gaps.
- » **Understand that domain expertise is critical to success.** Avoid solution providers that claim technology prowess but do not understand the assets and processes in your operations. Failing to do so risks longer implementation times, higher costs and, in some cases, failed projects. Black box approaches to APM don't work.
- » **Evaluate how the cloud and cloud-based services might be appropriate for your specific APM goals.** As previously noted, the cloud is a powerful platform for aggregating data, analyzing data, and collaborating around insights. It is also easily scalable and accessible — both internally and across an organization's value chain — relative to on-premises systems.
- » **Take a phased approach to adopt APM.** There is inevitably a learning process, particularly for those who are new to it. There are many examples of organizations opting for a "big bang" approach only to incur unnecessary costs and disappointment.

As APM success is never guaranteed, using public cloud services or SaaS can reduce the cost and risks of trying and failing.

Q. What does the future hold for the APM market?

A. The APM market is at a significant inflection point. The proliferation of data and analytical tools opens the door to more and better insights into the performance of assets of all types. The rapidly expanding world of cloud platforms and services — both large and small — is creating an array of options for organizations looking to deploy APM. It also opens the door to new business models, whether that means new approaches to decision making or the use of external services to manage assets.

What hasn't changed is that managers of assets are still focused on achieving greater visibility into and predictability of their assets. They know that they can get close to perfect predictability with enough data and good enough analysis of that data. This is both the opportunity and the challenge of managing physical assets that behave according to the laws of physics.

The strategies and approaches that improve the success of deploying APM haven't changed either. It starts with recognizing the central role of data and thrives on a willingness to embrace innovation. At this point in time, all APM roads lead to the cloud because of its scalability, accessibility, and growing role as the focal point for technology innovation. In summary, APM — after many years of being out of reach for most organizations — is becoming ubiquitous and the foundation for the next wave of operational excellence and resilience.

About the Analyst



Leif Eriksen, Research Vice President, Future of Operations

Leif's primary responsibility is leading IDC's Future of Operations practice with the IDC Energy Insights and IT/OT Convergence programs reporting to him. His team's research is focused on how digital technology — particularly cloud, collaboration, and AI technologies — is transforming operations across industries and within industries. They are at the center of defining how enterprises can, and should, navigate the journey of transforming their own operations using digital technology.

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