

How AI is changing the future of IT operations

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Today's IT environments are generating a skyrocketing volume of data and alerts that can become a management nightmare for IT teams. To help solve the problem, IT leaders are applying artificial intelligence (AI) to enhance IT operations.

As organizations transform, their infrastructures are becoming more dynamic and distributed. "It's a mix of on-premises and multi-cloud environments running on bare metal, virtualized servers and containers said Rodrigo de la Parra, AIOps Domain Leader at IBM at a recent *CanadianCIO Virtual Roundtable*. It's a challenge for domain-based tools to correlate the data across these different environments so that IT teams can respond to issues fast enough to meet business needs.

"We have to reduce the noise and empower operations teams to do what they do best," said de la Parra. By deploying AI in IT operations (AIOps), it allows IT to optimize the capacity of its operations. "Our goal is to avoid issues proactively by providing context and promote collaboration among siloed teams. This eliminates manual labour-intensive work so the team can focus on more valuable projects that accelerate transformation."

Indeed, according to [Gartner](#), "there is no future of IT operations that does not include AIOps."

AIOps explained

AIOps is a platform that leverages AI, machine learning, big data from different sources, automation and natural language processing, explained de la Parra. It complements the multiple separate, manual IT operations tools with a cohesive, intelligent, and automated IT operations platform.

As a first step, the AI solution collects and aggregates the ever-increasing volumes of operations data. The system relies on a centralized data lake as a "single source of truth," said de la Parra. He noted that it can analyze structured and unstructured data, like Twitter feeds, with no need for tagging. The advantage is that the platform provides visibility into performance data across all environments

As well, AIOps sifts through the data to identify significant events and pattern anomalies related to system performance. It will diagnose root causes and report them to IT for a rapid response. As the system and the machine learning matures, AIOps can solve issues without human intervention, de la Parra said. "It is a domain agnostic platform that provides a holistic view and identifies issues in real-time," he said. "There are no blind spots."

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— Rodrigo de la Parra, AIOps Domain Leader, IBM

The AI models use the data source to create a baseline of the way that a system is performing normally so that it can spot any deviations. This is more effective than a rules-based approach which can no longer cope with hybrid multi-cloud environments. When AIOps is combined with automation, “it allows IT teams to scale mundane activities efficiently,” said de la Parra.

Implementing AI Ops

In a poll during the roundtable discussion, 60 per cent of the participants said that they are not currently using AI technology to support IT operations. However, they said they’re interested in learning about the options. Thirteen per cent said they’re just starting to implement it, while seven per cent said they’re using it to diagnose and solve IT outages. Another seven per cent said they have no plans to integrate AI into their IT operations.

As the poll demonstrates, most Canadian organizations are at the exploratory stage on AIOps, said de la Parra. Typically, they move forward when scalability becomes an issue. He described two models organizations use as they begin to implement AIOps:

1. **Domain-centric solutions.** The entry point for many organizations is to upgrade traditional IT tools with the vendor’s AI infused, and rules-based machine learning versions. “This reduces noise, but it’s a starting point that will only take you so far,” de la Parra said. It provides a view of some issues, but usually across only a siloed domain (e.g. app & networking performance management, security, storage, middleware, service management, etc). As such, it doesn’t give visibility across all environments, such as hybrid multi-cloud, leaving potential critical blind spots.
2. **General purpose or domain agnostic platform.** This approach provides a holistic view and the ability to identify issues in real-time as the environment becomes more complex by analyzing feeds from multiple data-sources, including historic and real-time streaming, correlating relevant information and providing the next best action to resolve incidents faster via ChatOps. It provides a 360 degree view of the entire system and is more useful as environments become more complex.

“We recommend that a good place to start is by applying AIOps to an application that has many issues that IT is struggling to support where business impact is significant,” said de la Parra. This is a good way to start to train the machine learning systems to detect and predict anomalies.

One participant expressed concern about the length of time it could take to set up the AI and machine learning models. Typically, the IBM Watson AIOps platform can be evaluated in three or four weeks, de la Parra responded, where training the model can be achieved in several hours or days depending on the feed(s) size(s) and delivery latency. It has a high degree of accuracy for finding anomalies based on the quality and completeness of the data sources provided by using varying out of the box techniques.

The benefits of AIOps

By leveraging multiple separate, manual IT operations tools with a single, intelligent, and automated IT operations platform, AIOps enables IT operations teams to respond more quickly to slowdowns and outages, with a lot less effort. The platform reduces the noise created by false positives and the massive amounts of data.

The participants asked questions to gain a better understanding of what AIOps can do that other tools can't. A key advantage lies in the ability of AIOps to sort and correlate the data across different layers of the applications and environments, said de la Parra. Domain-centric solutions do not match that capability and they also struggle to handle unstructured data as well as AIOps does. Another benefit is that AIOps accelerates collaboration by integrating into ChatOps.

With AIOps, IT operations teams gain real-time insights and predictive analyses to respond to issues faster. It also makes it easier to meet user and customer service level requirements, said de la Parra. "The system enables them to move from a reactive to a proactive unsupervised approach." As one participant put it, "AIOps has a direct impact to the business as to whether we make money or lose money."

AIOps isn't only for operations, noted de la Parra. It can also be used earlier in the application lifecycle (shift-left) to analyze new implementations and predict risk based on similar change requests and associated incidents to mitigate potential problems.

A transition to AIOps supports the changing focus of IT, de la Parra said. Increasingly, the IT team is moving from a role of "keeping the lights on" to becoming an enabler for business objectives and revenue streams. Organizations are embracing this approach by providing bonuses to IT leaders when they deliver service level results that support the business.

Ultimately, one of the biggest benefits is that AIOps gives time back to the IT Operations team. "It gives them a better work life balance so they are more focused on valuable activities," said de la Parra. "When you put all of the pieces together to optimize performance and reliability, it makes IT operations a better partner for the business."

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