

A glowing blue square with a grid of small dots around its perimeter, containing the letters 'AI' in a bold, sans-serif font. The square is centered on a dark blue background filled with intricate, glowing circuit board patterns and lines.

AIOps

Challenges, Expectations Vs Reality

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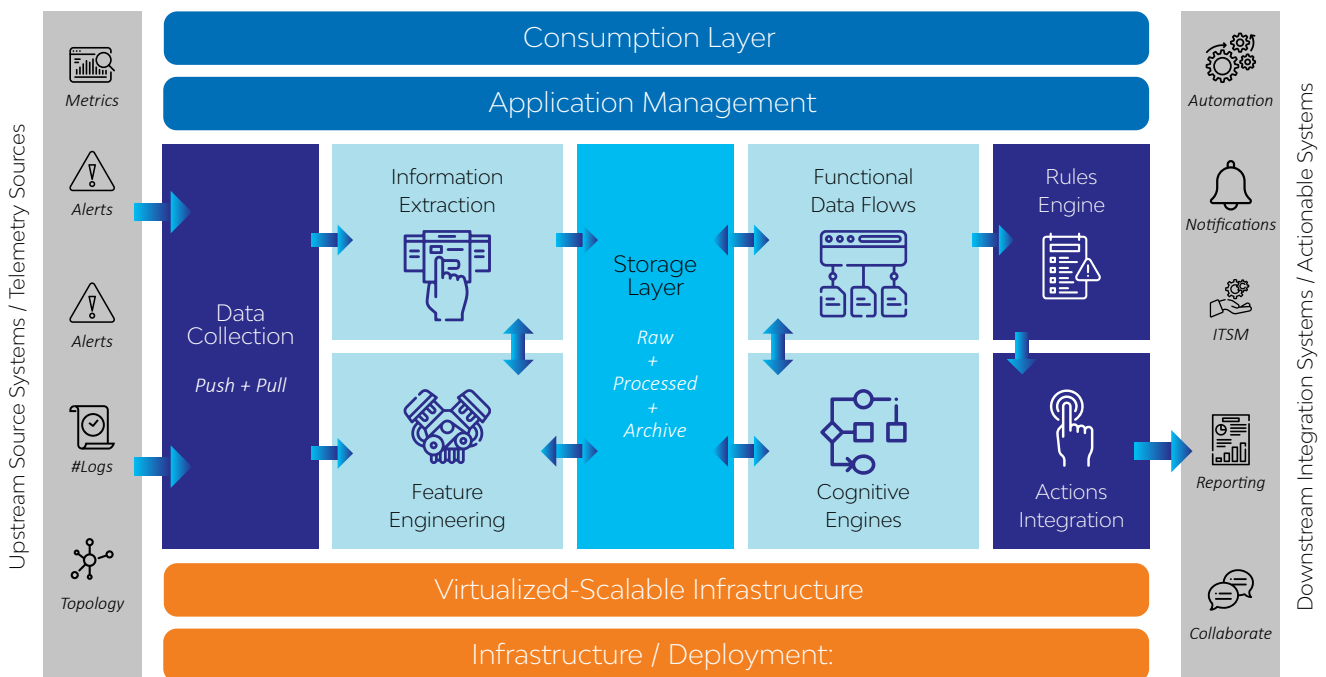
AI

The concept of Artificial intelligence exists since more than five decades. However, getting this into reality was a challenge due to the massive compute requirements. In the current modern IT world, compute resources are easily available at affordable cost. Hence, AI has started getting into the reality now. AI is now significantly contributing towards reducing human efforts and enabling them to be more innovative than performing mundane tasks.

Artificial intelligence for a common man is perceived as a robot of sci-fi movies, where it is more intelligent and faster than a normal human. It could think and take actions as human would do in that situation but without any mistakes. We have come long way to infuse intelligence in RO(BOTs) and it is maturing day-by-day.

AIOps

AIOps is an artificial intelligence tool which consumes IT data in operations, which are generated from multiple systems such as servers, network devices, IoT systems, cloud services, storage, databases and applications. It uses AI/ML techniques to perform data analytics to provide useful information to help operation engineers to provide service effectively, along with reducing their efforts. It enables them to be innovative and use their thought process to perform more complex tasks and operations.



AIOps is one of the boons in the IT operation service industry. It has now become a need of the hour as customers expect faster and quality service. The cost pressure is another aspect when service providers have to deliver quality service with lesser human efforts. Human computing speed is limited and varies from one person to another. BOTs excel in compute speed. AI/ML could uncover the hidden pattern of the data in operation and perform analysis at much faster rate than a human being could do. AIOps features such as smart monitoring, troubleshooting with log analysis, noise suppression, anomaly detection, failure prediction and automation works at much faster speed compared to humans.

AIOps has brought in a paradigm shift in transformation of IT Operations into smart operations. AIOps platforms could be capable of doing millions of log-file analysis in few seconds/minutes, whereas an engineer would take hour or days to analyze. As pace of technology are accelerating, the expectations too have grown from consumers end to deliver service at faster speed as well.

Advantages

Improved efficiency

Single pane of glass to consolidate monitoring of different IT assets and technologies, reduction in false positives alerts, correlations in events make operation management much easier and faster with reduced efforts. It could help to reduce and automate level 1 tasks.

Proactive operations

Anomaly detection and predictive analysis features of AIOps bring in change to transform operation from reactive to proactive mode. We could take preventive actions to avoid disruptive incidents.

Cohesive operations

Standard operating model has limitation and introduces siloed approach to manage respective technologies and functions such as application management operation is isolated from server infrastructure management. It needs collaborations between teams who have expertise in respective domain, and it takes time and efforts to bring them on the same page to investigate together to identify the root cause of the issue. However, AIOps helps in consolidation of alerts and logs from different technologies to make independent decision to identify the cause of the issue.

Cost reductions

IT Operations engineer needed to do daily tasks of monitoring, health checks, maintenance activities such as backups, patching, and so on. AIOps makes it possible to manage complex IT system through intelligent and smart operations. It can save the costs of resourcing while automating mundane tasks.

It cannot replace human completely as it too has limitations. AIOps solutions are maturing day-by-day and product companies are investing money and efforts in innovating to enhance AIOps features to overcome limitations and make it more effective and accurate. It takes its own course to mature and has dependencies on multiple factors to be effective to provide desired output.

Challenges

Below are some of the dependent factors which could make AIOps journey difficult and could disappoint consumer expectations and may even lead to failure of the implementation program.

Volume of data

Unavailability of enough data would be a challenge for AI/ML model to learn and makes it inefficient for future predictions. Model needs to have variety of data to understand the complexities of the environment to make it ready for future actions.

Quality of data

Poor data quality such as missing events, logs, fields, etc. would not feed in enough information for model to learn the pattern and behavior. And hence, it becomes challenging for it to predict and provide useful inferences.

Non-standard processes

Legacy IT operations processes makes automation journey a bumpy ride due to too much human interventions, which leads to dependencies and delay in task completion and almost impossible to automate. Consumers who are willing to adopt AIOps, must initiate standardization initiative to make way for automation to be effective and fruitful.

Variance in data

It is expected to have minimum changes in IT systems during AIOps implementation, otherwise the model would make wrong or no predictions. And it would need to retake learning course over period of time to understand recent changes in the environment to upgrade its learning.

Integrations complexity

Data is the fuel for analytics tool without which it cannot provide any valuable output. AIOps platform implementation process becomes difficult to integrate with old legacy application and systems which do not have modern techniques to integrate with the platform. AIOps solution providers are working hard to increase their scope of data feeds to enable tool to be more effective.

Environmental maturity

Unmatured knowledge base, documentation and policies have adverse impact on AIOps deployment strategy to elongate overall implementation timelines as it needs to be templated first so that model learning could be made possible.

Expectation Vs Reality

As per Gartner, new technology passes through the Hype Cycle. AIOps creates an expectation in the mind of consumers and it becomes a challenge and an enormous responsibility for the solution providers to meet those expectations.

Expectation #1

AIOps implementation does not need a strategy

Reality:

AIOps is a complex concept at this point of time and it needs to have detailed planning before initiating a deployment project. Unlike standard products, AIOps are configured with respect to the specific business requirements.

Expectation #2

AIOps should have predefined KPIs of business value realization

Reality:

Customers do expect to know the measurable business value realization before deployment of AIOps. Proof of concept for event correlations and noise suppression are very common methods used by almost all vendors to estimate output to justify the investment at certain level. However, currently no platform exists, which during PoC, can evaluate data from entire infrastructure to provide approximate business realization from entire feature perspective.

Expectation #3

AIOps platforms should be plug-and-play

Reality:

Applications, APM, monitoring tools produce variety of data in different format. It needs to have customized API integration with standard schema mapping of required

fields. Majority of AIOps platforms have standard integration framework available for enterprise applications. However, it is required to develop integrations for other applications.

Expectation #4

AIOps should figure out all ITOps problems

Reality:

The expectations are that AIOps solution should consume data and figure out what is wrong and where. It should even take over manual tasks when customers were unable to provide all required information for AIOps to learn. Sometimes, there are challenges to integrate with secured systems; however, the anticipations are that it should have intelligence to relate events intelligently. AIOps would function and provide output as it is programmed. It can't provide an analytical output of those systems, where data consumption from it is limited.

Conclusions

AIOps is not only a valuable tool but the need of the hour as IT is growing and becoming complex at faster speed than we had expected. It helps to do goldmine out of the data of the IT state. However, it is still maturing and there is still a long way for it to become standard tool which would have minimal limitations and could live up to the expectations of the customers. During this maturity state, AIOps solution providers need to acknowledge the very real challenges customers face with tools, knowledge and culture. At the same time, customer should have proper consultancy to make them cognizant enough to understand the capability and limitations of the tools so that they could identify the right tool for them and have thorough review to understand if it would resolve their IT problems. Accordingly, they need to facilitate requirements to make AIOps implementation a successful journey.

Author Profile



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Navin is heading AI/ML platform deployment and support function. He has more than 19 years of experience in IT operation services and automation with specialization in IT service delivery. He is a data science certified professional. In his role in LTIMindtree, he supports to deploy Artificial Intelligence platforms and products for global customers to embark their AIOps journey, which would enable them to be on the cutting edge of tool-based automation.

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