

AISWITCH AIOps Maturity Model: RPA, SmartOps, LeanOps, ZeroOps

Who should read this: End-user Ops Leaders- AI users/ strategists/ digital business leaders/ service provider client partners/ AI-automation leaders

Enterprise AI-automation & operations (IT/ business) leaders and end-users/ service providers/ business leaders who are planning to scale up adoption of AI-automation solutions.

Why is an AIOps maturity model needed?

Based on several surveys regarding AI-automation adoption in current years, more than 70% enterprise leaders across business and IT functions are struggling

- to define a measurable hence manageable target-state pre and post implementation of expensive AI-automation solutions,
- to intelligently automate workflows that consume costly manual labour but yields much lower response/ processing times and performance parameters, in comparison with bots or AI-based intelligent agents/ digital assistants.

Given that 90% organizations have gone at least 5-10 POCs on AI and intelligent automation tools applications in specific areas of their IT and business operations, now they are eagerly waiting to scale it up, especially in the context of global business disruptions where AI-automation have become imperative for maintaining business service continuity. However, most of these organizations are still taking one-off measures to quickly ramp up services, deploying off-the-shelf tools. While this approach serves the immediate purposes, it also creates potential technical debts for organizations, in the long run. Following a simple maturity model gives us a quick and easy way to be future-ready, in terms of having a clear view of where we stand today, and where we want to go, tomorrow. That's what the AIOps maturity model helps us to achieve.

What is AIOps Maturity Model and how to use it: RPA-> SmartOps->LeanOps->ZeroOps

AIOps as defined by Gartner, can be semantically extended as a term typically encompassing all applications & use cases of AI/ML algorithms and techniques in the world of IT [and Business, ideally] operations.

While this form of generic AIOps, predominantly the IT ops part of it, is usually seen in the long-term target state storyboard for most enterprise AI journeys, the intermediate steps are often not clearly charted out. The simple AIOps maturity model presented herein will help operations leaders:

- to identify their current-state situation in terms of their team's ability to leverage AI-automation technologies and advanced solutions, to augment their operational efficiency, productivity, costs vs. QoS and improve user/ customer experience.
- To depict their target aspirational state in a broad-based manner, covering not just the journeys in the advanced technical landscape of AI-automation tools and algorithms but also being able to articulate their value expectations from the journey and improvement in maturity, in each step.

Summarily speaking, AIOps typically shows 3 basic levels of maturity, with the 3rd level being more of an aspirational state till now:

Level 1: RPA maturing into initial cognitive use-cases. [Most AIOps solutions are here now, rest are mostly marketing overhype and noise]. Common example starting points include-

- all rule-based static IT/ business ops processes, with codifiable decision logic and autonomous action workflows, with various degrees of human controls- basis risk profiles, outcomes and need for speed of different ops processes => RPA
- scope stretching into limited & need-based support from basic cognitive techniques e.g. NLP for unstructured / mixed data processing, screen reading, smart OCR on phygital documents, entity-attributes-relationship extractions, etc.
- moving from static, post-facto analytics and reactive SM/ ops processes, to predictive analytics in Ops, leading to more preventive and proactive processes

Level 2: SmartOps & Lean AIOps - Uses 'manual by exception' as key working principle, with dynamic and intelligent K-bases, knowledge graphs etc. [Arago HIRO engine being an example]. Involves extensive use of medium-advanced AI/ML algorithms and techniques, primarily supervised learning methods, leveraging historical data and human knowledge present in SOPs and process documentation, integrated process logs, real-time / near-real-time systems monitoring data, APM tools data, SM tools data and so on. Example scenarios may include-

- Most of the operational processes that leverage human experiential knowledge and judgement, to dynamically and intelligently learn and respond to different situations and operational issues, are made autonomous.
- Extensive use of really 'smart' autonomous virtual agents that can dynamically & intelligently learn and update themselves with new models/ patterns/ resolutions/ classifiers etc., in real-time or near-real time.
- Human controls exist more in form of visibility and audits rather than actual action dependencies, mostly for exception management where the virtual agents autonomously decide the needs for human decisions, depending on dynamic and contextual risk assessment of assets, services and situations.
- Predictive analytics matures into prescriptive and autonomously actionable analytics, also supporting continuous learning by machines.

Level 3: AIOps leading to ZeroOps- All IT infra and apps stacks becoming 'smart'- advanced ML-empowered, self-learning, self-'aware', self-optimizing, self-healing assets, eventually leading to 90%+ lights-out operations. These will leverage most advanced AI algorithms e.g.

- starting with unsupervised deep learning, reinforcement learning
- approximation algorithms,
- GAN
- meta-learning [machines learning how to self-learn, AutoML is already here, dynamic form of that in meta-learning is a big algorithms-research area now]
- imagination-augmented algorithms, e.g. for generating multiple alternative scenarios and resolutions to problems that do not have human-resolved precedence to learn from.

In such a scenario, ideally machines will exchange knowledge and intelligence amongst themselves, in real-time, to learn from each other, in an environment similar to the Robo-Earth project, but applicable in the context of some kind of Universal Ops Intelligence Bus, say across all the smart enterprise IT and business services assets, that will constantly augment itself through continuous and integrated learning.