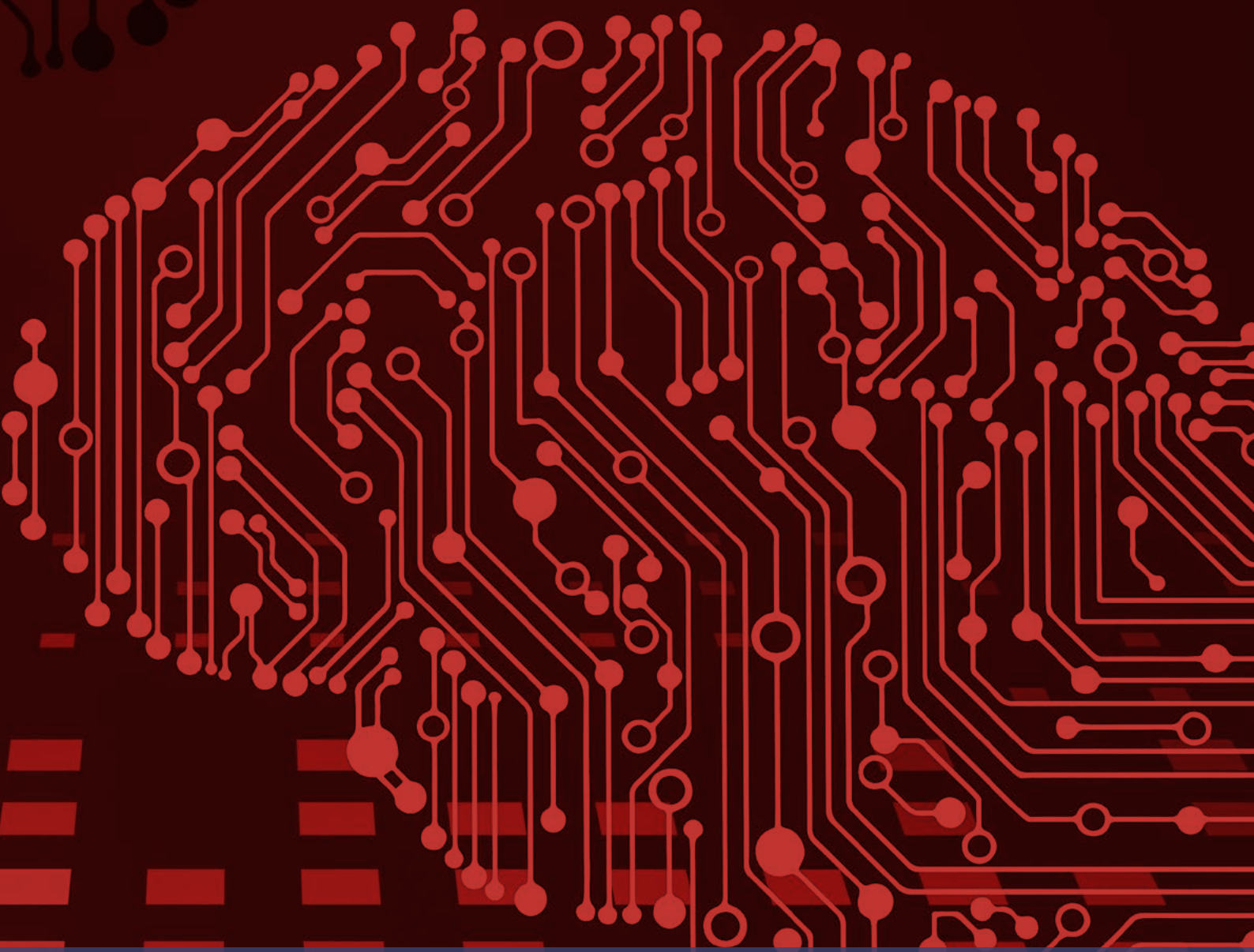
nasscom



AIOps

The Key to Achieving Tech Agility

Report | July 2023

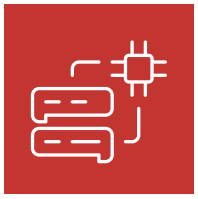
Contents

Executive Summary

Executive Summary

AIOps Technology Overview

- AIOps is a **rapidly growing field** in IT management that **leverages AI & ML** technologies to automate IT operations and enhance its overall efficiency.
- **With 1 in 3 organizations** already using AIOps, **cost savings of up to 50%** and **productivity improvements of up to 45%** has been seen.



AIOps Market Overview

- Global AIOps Platforms Market was **$8.3 Bn in 2022** and is forecasted to reach **$80.1 Bn by 2032,** estimated to grow at a CAGR of **25.4%.**
- AIOps industry is segmented based on type, deployment mode, application, and industry verticals.
- AIOps **end-to-end technology stack** is critical to enabling organizations to get the most out of their AIOps investment.

AIOps India Overview

- Indian AIOps **end users are still maturing** with largely companies being at the monitoring stage (descriptive, predictive).
- Platforms and service providers mainly **face budget constraints from consumers** in implementing AIOps and hence are reaching out to global customers.
- Despite barriers, there is a **growing interest in AIOps in India** due to the increasing complexity of IT systems and need to improve IT operations to remain competitive.

AIOps India Market Adoption Trends

- With **IT environments quickly scaling at unprecedented rates,** traditional IT Management approaches have taken a back seat paving way for AIOps.
- More than **50%** of businesses have either fully enabled or begun implementing AI into their workflow, hence **AIOps will be integral to enterprise digital transformation** moving forward.
- Fastest growing implementation of AIOps has come in the form of **cybersecurity,** with it being the top use case for AI implementation.

AIOps Adoption Challenges

- Organizations need to be aware of the challenges associated with use cases for AIOps before implementing a solution.
- Common IT challenges such **as cost optimization, root cause identification, correlation between components, use of multiple analytics tools, and lack of unified view** are taken care by common AIOps platforms and tools.

Recommendations to Maximize AIOps Adoption

- To start AIOps journey learn about AIOps today and **start by choosing small, achievable use cases.**
- Discuss with peers and leaders what AIOps is all about. Experiment by using open-source tools and demonstrate simple techniques to begin.
- **AIOps is a journey, not a destination.** Implementing AIOps and witnessing the results takes time.

#1
What is AIOps?

#1 What is AIOps?

Introduction

IT operations are the day-to-day activities and processes involved in managing an organization's IT infrastructure. This includes system monitoring, troubleshooting, managing backups and disaster recovery, and ensuring security and compliance.

They are essential for an organization's IT infrastructure to operate effectively and efficiently, support business processes, and enable growth. However, when IT operations are not functioning properly, system failures, security breaches, and other problems can occur, significantly impacting business productivity and revenue. Therefore, it is important to have robust IT operations management processes in place to ensure the security, stability, and optimality of an organization's IT systems. Traditional approaches to IT operations management involve manual monitoring and analysis of system data. This can be a time and labour-intensive process, leaving an organisation's IT team reviewing logs and metrics for hours.

As the technology landscape evolves, the amount of data companies generate is growing at an unprecedented rate. Digital transformation and the advent of cloud computing have made IT infrastructures more complex and distributed. This complexity and ever-increasing data volumes pose challenges for IT operations teams. To meet this challenge, enterprises are turning to AIOps.

Definition

AIOps, short for Artificial Intelligence for IT Operations, is a new and rapidly growing field in IT management that leverages artificial intelligence and machine learning technologies to automate IT operations and enhance its overall efficiency. While AIOps began with the purpose of automating IT operations, it soon became a horizontal, serving all verticals of the tech industry.

AIOps provides real-time insights and analysis of massive amounts of IT data, including application logs, network data, security events, and performance metrics, to help enterprises identify and resolve IT incidents and problems more rapidly and effectively.

Figure: Understanding AIOPs

AIOps: Artificial Intelligence for IT Operations

Entered IT lexicon in 2016

AIOps is a term coined by Gartner in 2016 as an industry category for ML analytics technology that enhances IT operations analytics

Marriage of Big Data & ML

Umbrella term for the use of big data analytics, ML and other AI technologies to automate the identification and resolution of common IT issues

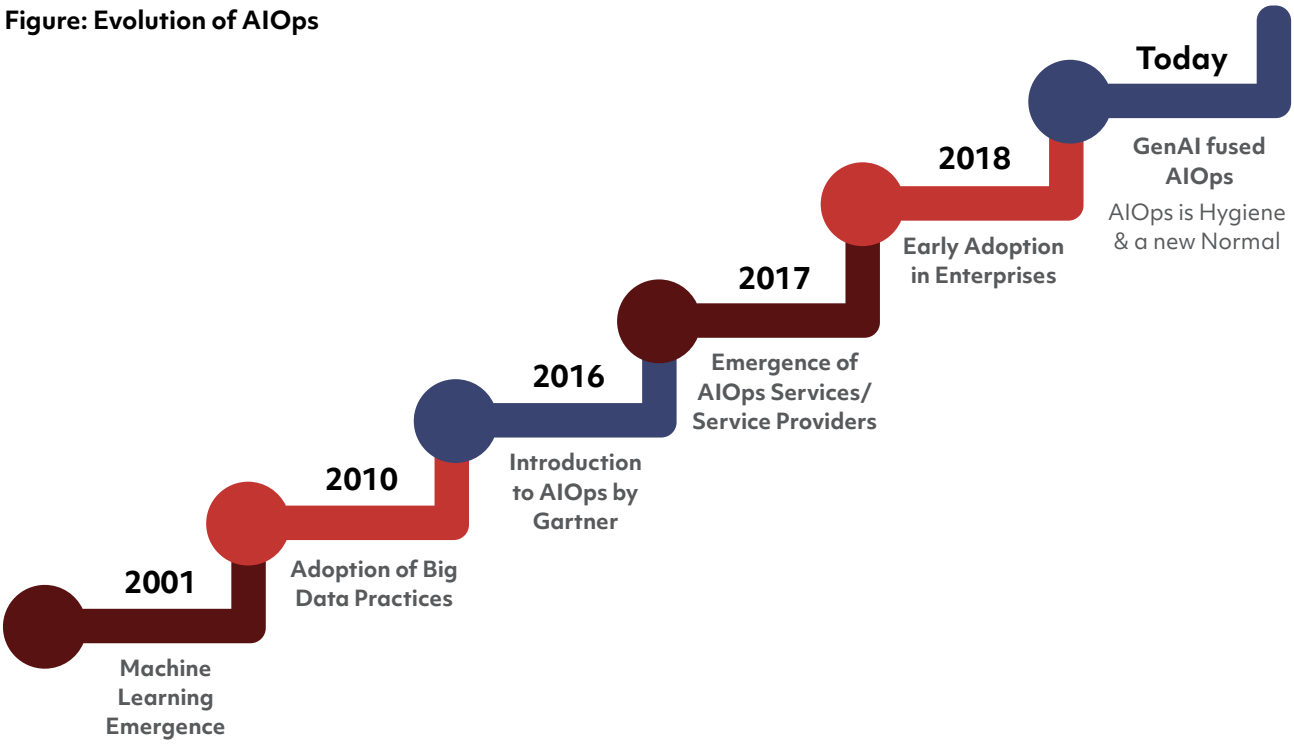
Automates IT operations

AIOps aims to intelligently identify patterns, augment common processes and tasks and resolve IT issues

To understand how AIOps came into existence, the evolution of AIOps is talked about in the next section.

Evolution of AIOps

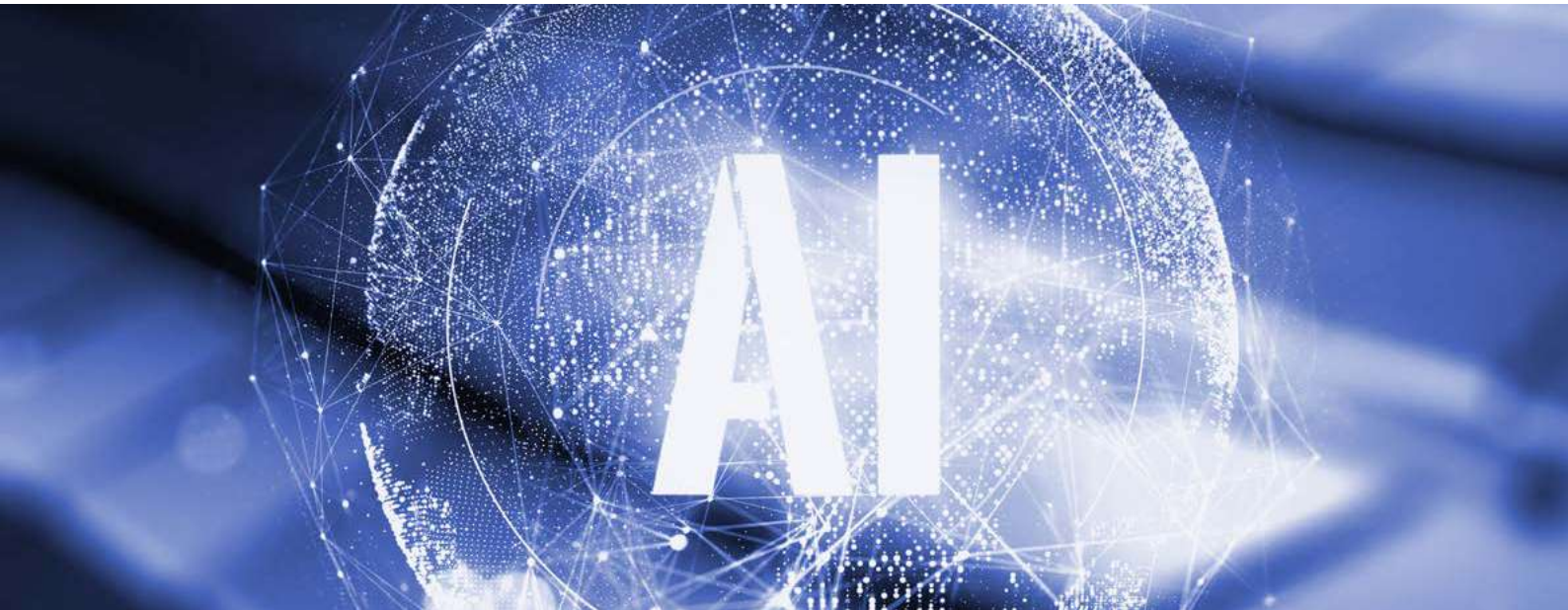
Figure: Evolution of AIOps



Post emergence of Machine Learning in 2001, the big data practices started getting adopted in enterprises in 2010. AIOps was then a term coined by Gartner in 2016 as an industry category for machine learning analytics technology that enhances IT operations analytics. Subsequently it led to emergence of AIOps services and service providers in 2017 and early adoption in 2018.

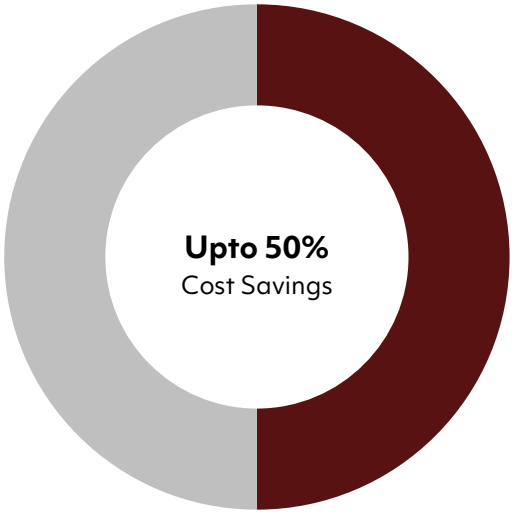
AIOps has become increasingly popular over the past years. It has grown out of several trends and needs affecting ITOps, including IT environments to becoming a hygiene and new normal today with GenAI infusion.

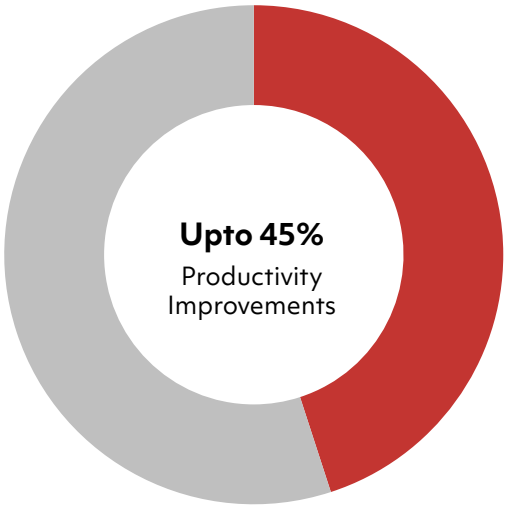
Today's AIOps platforms use data from multiple sources to provide a comprehensive view of the IT environment, making it easier for IT teams to detect and diagnose problems in real-time. With the use of machine learning algorithms, these platforms can analyse the data and identify patterns and anomalies that could indicate potential issues, reducing the time it takes to identify and resolve incidents. In addition, AIOps platforms can automate common IT tasks, such as incident response and resolution, freeing up IT staff to focus on more strategic initiatives.



Impact of AIOps

Figure: Possible Impact of AIOps





73%

Organizations are very or somewhat interested in using AIOps

1-in-3

Organizations are already using AIOps

30%

Enterprises will extend network attentiveness across IT teams, including AIOps by 2024

35%

Organizations are prioritizing investments in AIOps to improve datacentre performance

Source: nasscom expert interviews, IBM Global AI Adoption Index, IDC, ESG

Advantages of AIOps

- One of the key advantages of AIOps is its **ability to improve IT service availability and performance.** By providing real-time insights into the IT environment, AIOps platforms can quickly identify and resolve issues before they become critical problems. This reduces downtime, improves end-user satisfaction, and increases the overall reliability of IT services.
- Another important benefit of AIOps is its ability to **improve collaboration and communication within IT teams.** With centralized IT data, teams can more easily share information and work together to resolve issues, improving response times and reducing the risk of human error.
- **Significant reduction of manual work and IT operating costs** over time and predictive insights for data-driven decision making
- **Faster MTTR** (Mean Time to Respond is the average time it needs to begin the work associated with a service ticket) & **MTTD** (Mean Time to Detection is the time it takes for an issue to be identified as one requiring attention) through data-driven automations.
- Continued need to support remote operations leads to AIOps enabling predictive remediation and "self-healing" systems.

AIOps is going to serve as the fulcrum around which we will re-examine current IT operations processes in order to introduce improved collaboration between humans, tools, and bots. The only word of caution; is that this shouldn't be viewed as the implementation of a tool or platform but rather as a new way of working where procedures, people's roles, and tools all need to be reviewed. AIOps will be essential in the hybrid IT world of today for bringing resilience at speed and scale as well as for assisting in waste reduction. AIOps will provide E2E Service Value Chain Visibility and produce Actionable insights by integrating throughout the full value chain and applying intelligence to it."

Vijay Nair
Lead, ACE TOPAZ, Automation (AIOps) CoE (ACE), GDO
LTIMindtree Limited

AIOps represents a major step forward in the evolution of IT operations, providing organizations with the ability to manage their IT environment more effectively and efficiently. By leveraging the power of artificial intelligence and machine learning, AIOps platforms are changing the way IT teams work, helping organizations to improve their IT services, reduce downtime, and enhance the overall efficiency of their IT operations.

Operation teams are being asked to do more than ever before. In a common practice, old tools and systems never seem to go away completely. Yet the same operations teams are under constant pressure to support additional new projects and technologies, very often with same or declining staffing. Also, increased changed frequencies and higher output in systems often means the data these monitoring tools produce is almost impossible to consume.

Solution Spotlight

Infosys implemented Infosys LEAP to a client by eliminating noise, creating actionable incidents based on correlated events and performed self-healing actions through automation workflows and resolver BOTs. This resulted in **99.4% Noise Suppression** from alerts to incidents and **48M+** Events/ Alerts processed.

Organisations are increasingly witnessing the benefits of AIOps

90-95%

The target of AIOps is to have 90-95% of the operative work done automatically by machines while human intervention is needed just for the remaining 5-10%

50%

Overall IT budget cost savings ranging of up to 50% has been seen

35-45%

improvements in productivity can be expected

48%

of organizations today are making decisions based on quantitative analysis[4]

30%

growth expected in number of organizations with a formal data governance team

Top 5 Companies

The top 5 companies in each industry are expected to use tech to deliver insights and as a platform for innovating during a global crisis such as recession or supply chain disruption[6]

30%

By 2024, 30% of enterprises will extend network attentiveness across IT teams, including AIOps[7]

35%

35% of organizations are prioritizing investments in AIOps to improve datacentre performance[8]

Source: SME interviews

Solution Spotlight

L&T Technology Services delivered to a client improved employee experience by implementing AI powered Chatbots for personalized & proactive service and predicting potential issues and proactive address potential downtime & interruption.

AIOps and MLOps are different

In the hunt for greater operational efficiency and improved effectiveness of solutions, organizations around the world are increasingly turning to automation solutions. This means, growing number of tech leaders are mining into both MLOps and AIOps. While both machine learning and artificial intelligence play a big role in helping companies achieve operational efficiency, MLOps and AIOps are very different disciplines involving different technologies and processes. Most importantly, they serve different goals.

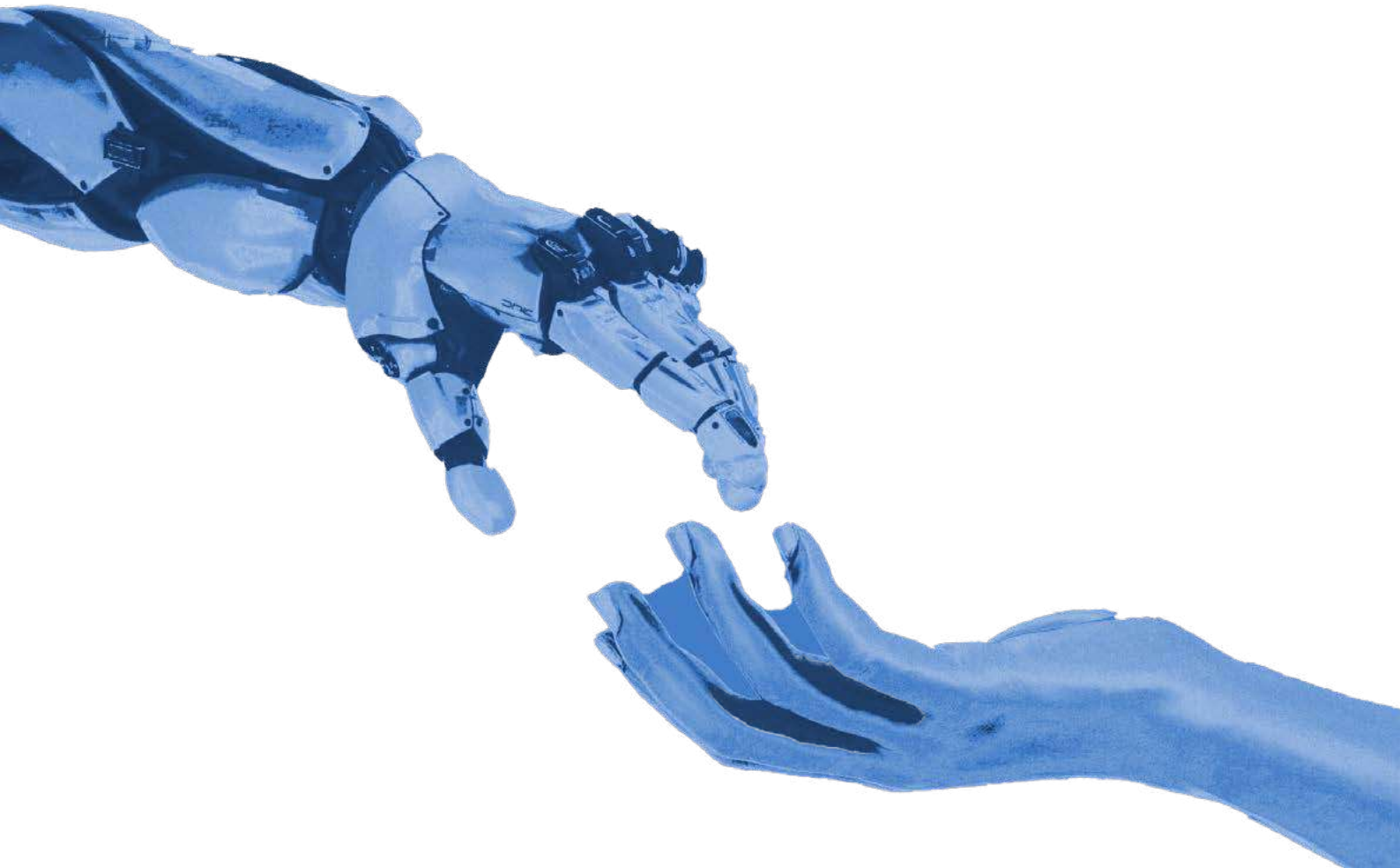
However, despite the distinct differences, there are overlaps in the teams and skills required to successfully implement AIOps and MLOps.

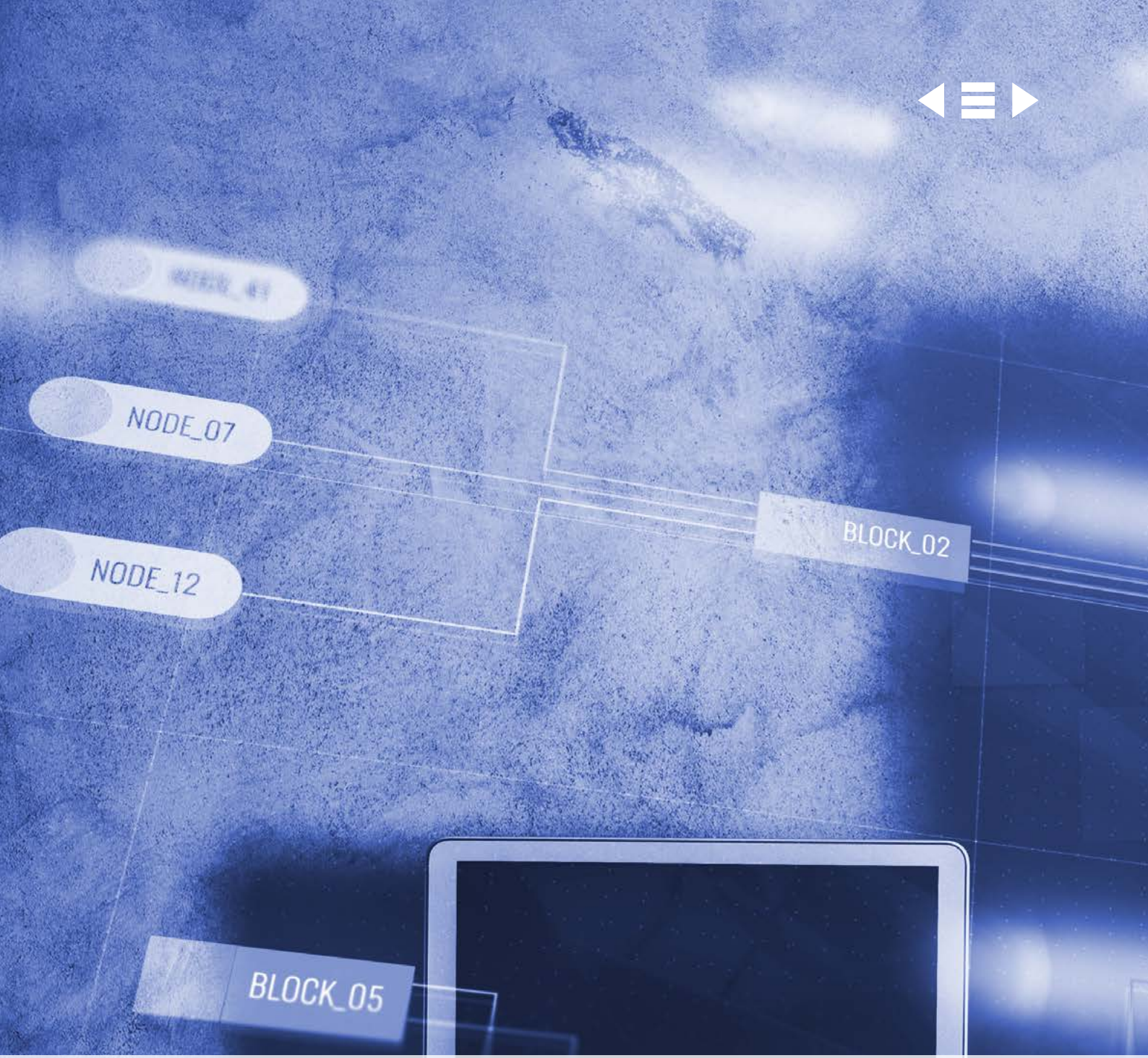
While AIOps combines big data and machine learning to automate IT operations processes, MLOps is the process of creating, deploying, and maintaining machine learning models. In other words, AIOps automates machines while MLOps standardizes processes.

AIOps is important for improving collaboration, increasing ROI, and facilitating digital transformation, especially for businesses that work with multi-tiered environments, manage thousands of applications and users, and require proactive performance monitoring.

On the other hand, MLOps is crucial for developing and deploying machine learning models in a standardized and efficient manner.

However, despite the distinct differences, there are overlaps in the teams and skills required to successfully implement AIOps and MLOps.



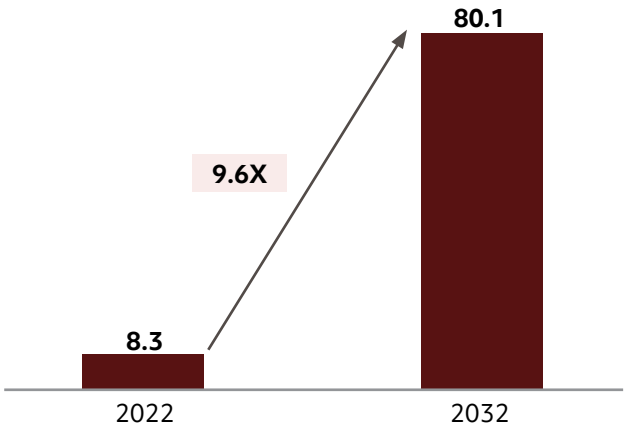


#2
AIOps Landscape

#2
AIOps Landscape

Market forecast

Figure: Global AIOps Platform Market Forecast
(in $ Bn)



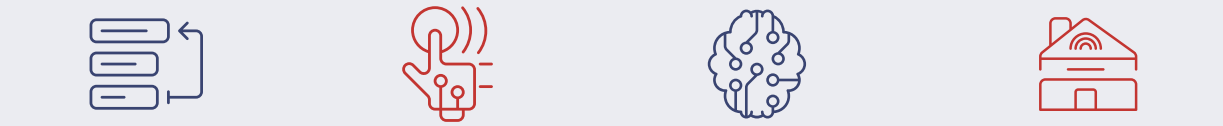
In the recent years, AIOps platforms have gained a lot of traction as enterprises have continued to expand their use across multiple IT Operations management techniques.

AIOps platforms market is forecasted by Future Market Insights to reach $80.1 Bn in 2032 from it being $8.3 Bn in 2022 i.e., 9.6x growth. The segment is estimated to grow at a CAGR of 25.4%.

Source: Future Market Insights

How AIOps is being Offered

How AIOps is being offered:



By Type	By Deployment	By Application	By Industry
■ Services ■ Platform	■ Cloud ■ On-Premise ■ Multi-Cloud	■ Application Performance Management ■ Infrastructure Management ■ Network & Security Management ■ Others	■ BFSI ■ Hi-tech/ Telecom ■ Manufacturing ■ Retail ■ Healthcare ■ MPE ■ Others

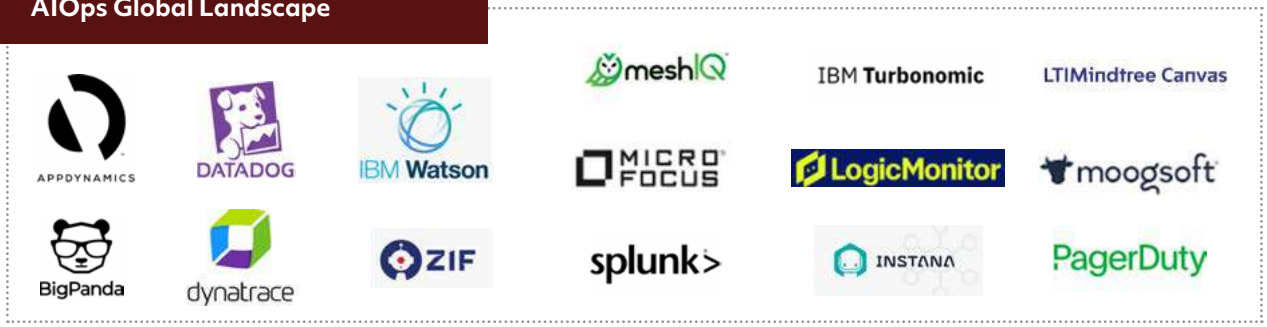
Source: Allied Market Research, nasscom expert interviews

The AIOps industry is mainly segmented based on type, deployment mode, application, and industry verticals. Based on type, the market is segmented into platform and services, while on the basis deployment mode, the market is segmented into on-premises, cloud, and multi-cloud. Based on application, it is segmented into application performance management, infrastructure management, network and security management, and others. By industry verticals, the market is segmented into BFSI, Hi-tech/Telecom, Manufacturing, Retail, Healthcare, MPE, and others.

Global AIOps Platforms Landscape

AIOps Global Landscape

Illustrative, not exhaustive

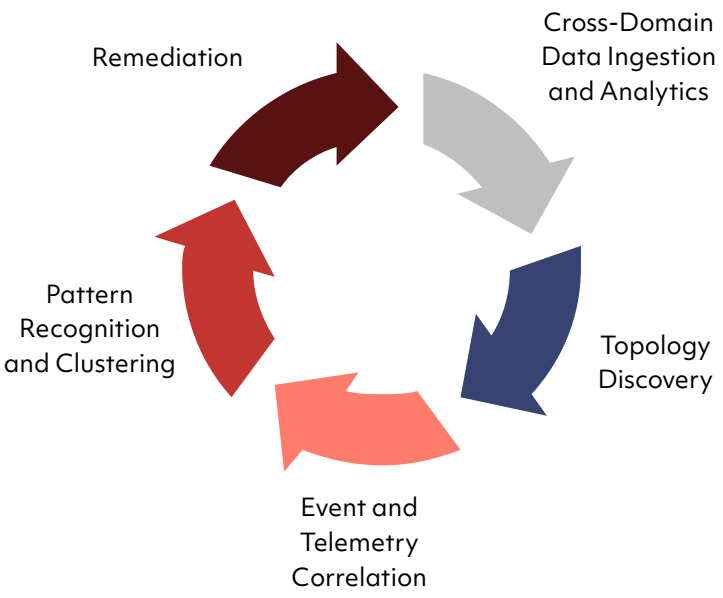


Source: nasscom expert interviews

AIOps Platform vendors have a wide range of capabilities that continues to expand. The platforms differ by their abilities to ingest data and use cases. Above infographic provides a representative sample list of AIOps platforms.

AIOps Platforms Observability

Central Functions of AIOps Platforms



Common AIOps Capabilities

- Anomaly Detection
- Root Cause Analysis
- Event Correlation
- Automated Remmediation
- Performance Modeling
- Cohort Analysis

Differentiation in AIOps Platforms

- Consumer Type
- Modeling Constructs
- Classifiers
- Algorithms
- Data Types
- Data Sources

Source: Gartner, nasscom expert interviews

The five common central functions of AIOps Platforms are discussed below:

Cross-Domain Data Ingestion and Analytics

An AIOps platform can ingest, index, and standardize events or telemetry from multiple domains, tools, or sources, including infrastructure, networks, applications, cloud, or existing monitoring tools for cross-domain analysis. The platform must further enable data analytics using machine learning at least two points, including:

a) Real-time analysis at the point of ingestion (streaming analytics)

b) Historical analysis of stored data

Topology Discovery

AIOps platforms periodically discover and assemble unified topologies of IT assets, including applications, across domains. Topologies can include physical proximity, logical dependence or another dimension that captures the relationship between IT assets and services.

Event and Telemetry Correlation

AIOps platform automatically correlates and compresses events across telemetry domains or sources, reducing unnecessary human intervention. The correlation combines time and topology to group-related events.

Pattern Recognition and Clustering

An AIOps platform processes events, and telemetry data to detect or predict major events or incidents. The platform uses historic data for an initial baseline and continually learns and refines individual patterns of major events based on historical data, real-time streaming data, from operator input and reinforcement mechanisms.

Remediation

The AIOps platform continuously learns and improves associations between each important event and the operations response by either explicit operator specification or observation. The AIOps platform might offer a recommendation, automate a response, or trigger an external automation system.

“As an IT organization, we are committed to deliver worldclass employee experience and for that it is crucial that we utilize the available platforms, technology, data, and AI to deliver integrated and personalized services. We have an ability to sense and respond rather than react and move towards auto isolate and self-heal systems. By doing so, we improve the operational efficiency, maximize productivity, and minimize costs.”

Anand Vaitheeswaran
CIO,
L&T Technology Services Ltd.

Solution Spotlight

GAVS Technologies implemented some capabilities of its proprietary **AIOps Platform Zero Incident Framework™ (ZIF™)** for a client which is a pioneer in housing finance in India

- Full-stack monitoring to monitor all components (servers, storage, network devices)
- Application Performance Monitoring (APM) to provide deep insights into application performance & direction for user experience enhancement.
- Intelligent event correlation.
- Predictions to detect incidents in advance.
- Remediation of issues before they strike operations.

AIOps India Landscape

Illustrative, not exhaustive

Source: nasscom expert interviews

AIOps is a relatively new field that is still in its early stages of adoption in India from end-user point of view. Most companies in India are still at the monitoring stage of AIOps, which involves using descriptive and predictive analytics to monitor IT systems and identify potential problems. However, there is a growing trend of companies moving towards the prescriptive stage of AIOps, which involves using AI to automatically recommend solutions to problems.

There are several reasons why Indian companies are still maturing in terms of AIOps adoption. One reason is that many companies are still struggling to get their basic IT operations under control. Additionally, the cost of implementing AIOps solutions can be a barrier for some companies. Also, the need for more AI/ ML skills and the talent required to manage data effectively is one of the challenges.

Despite these challenges, there is a growing interest in AIOps in India. This is due to the increasing complexity of IT systems and the need for companies to improve their IT operations to remain competitive.

As the adoption of AIOps in India continues to grow, it can be expected to see more companies moving towards the prescriptive stage of AIOps. This will allow companies to automate IT operations and improve their IT service delivery.

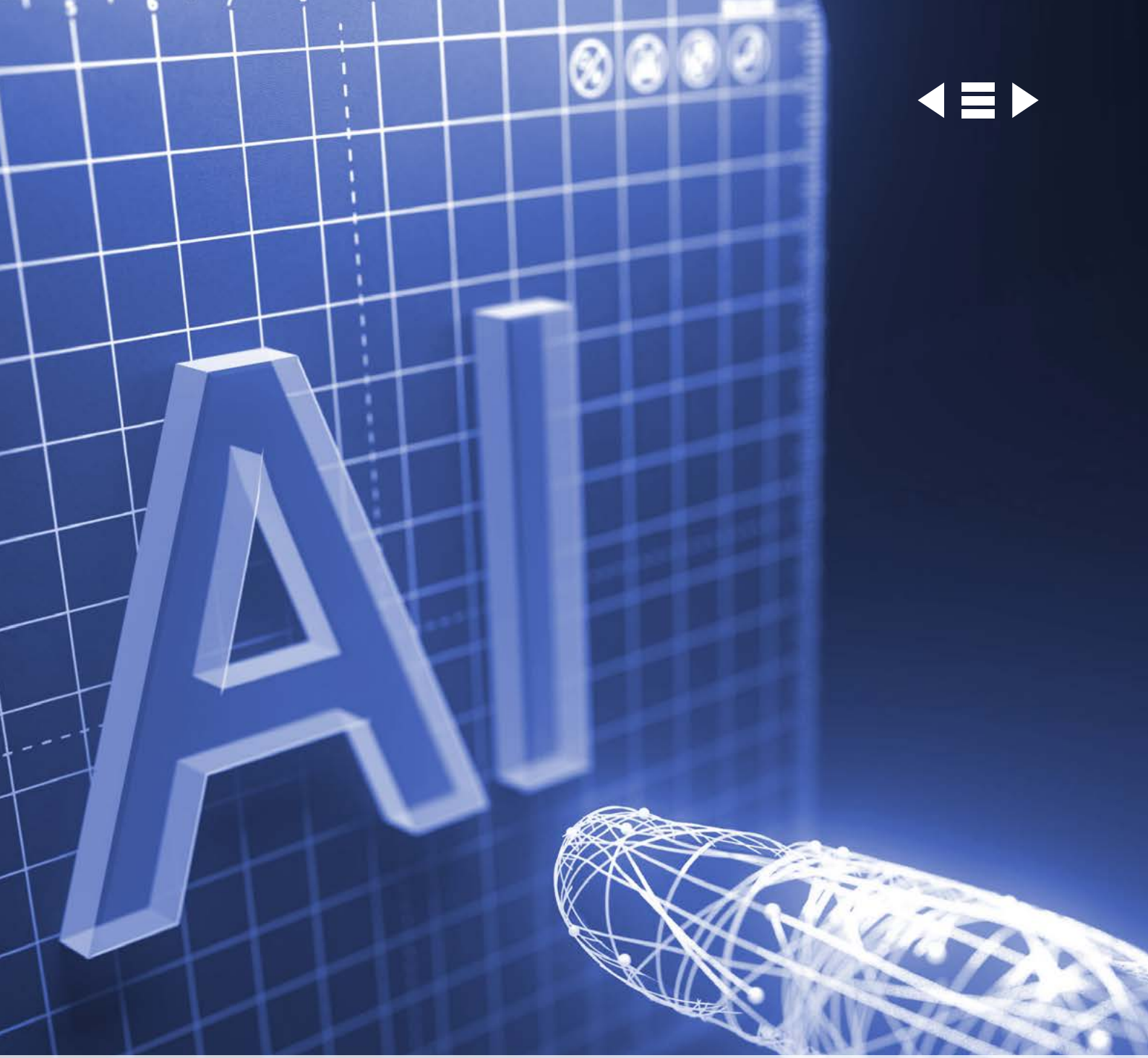
Our research indicated that an AIOps end-to-end framework is needed to ensure that AIOps is implemented effectively and efficiently. The following section aims to provide an AIOps framework that is a direction for organizations to follow as they adopt AIOps, and it helps to ensure that all the necessary components are in place.

Solution Spotlight

VuNet Systems is a next-gen visibility and analytics company that uses full-stack AI & Big Data analytics to accelerate digital transformation within an organization. vuRCABot, is VuNet's AIOps Product to vuSmartmaps, a Business Journey Observability platform.

Solution Spotlight

Affine.AI developed a sophisticated **AWS Based AI Solution to Automate the Overall Process of ODW Server Health Monitoring** by enabling the system to deal with issues such expensive queries & recommended the decision on terminating or pausing the queries in near real time using ML Algorithms and cloud-based deployment for the AIOps Solution.



#3
AIOps Success Stories in Action

#3
AIOps Success Stories in Action

AIOps solutions lead to cost savings

LTI Mindtree

AIOps Solution/ Tools:
Canvas Opsight, CANVAS AIOPs, PowerShell, Azure Devops, Ansible, bmc Control-M, Servicenow, UIPATH

Impact Created by AIOps:

- $2.5 Mn annual IT cost reduction
- 45K hours saved through automation
- 58% reduction in requests, 60% possible MTTR improvement via automation

Infosys

AIOps Solution/ Tools:
Infosys LEAP

Impact Created by AIOps:

- Cost savings of $12.8 Mn, Agile AMS rolled out for 16 DevOps teams
- 20% effort savings for key operational activities
- 99.4% Noise Suppression from Alerts to Incidents

Affine.AI

AIOps Solution/ Tools:
AWS Based AI Solution

Impact Created by AIOps:

- For each Enterprise level server, the deployed solution was able to provide the client with $1.8-2 Mn worth of annual cost savings
- Reduction in unplanned downtime by ~80%, significantly boosting operational efficiency
- The solution addresses Responsible AI with data privacy, data security and explainability

AIOps solutions help save time and effort

Cisco

AIOps Solution/ Tools:
Cisco Nexus® 9000 Series switches, Cisco® Data Center Network Manager (DCNM), Cisco Nexus Dashboard, Cisco Nexus Insights, Cisco Network Assurance Engine (NAE), Cisco UCS® servers, Cisco Intersight™ Infrastructure Service

Impact Created by AIOps:
- Unified operations toolset and correlated infrastructure insights
- Cut the time spent going back-and-forth between monitoring tools by 50%
- Reduced correlation efforts by 40 to 50%
- Accelerated mean time to detect (MTTD) by 30%

Capgemini

Impact Created by AIOps:
- Detects and reacts to potential issues before they turn into failures
- Reduces effort required for ticket resolution
- Reduction in MTTR for tickets enabling faster issue resolution

GAVS Technologies

AIOps Solution/ Tools:
AIOps Platform Zero Incident Framework (ZIF)

Impact Created by AIOps:
- Detection of 95% of high impact incidents in advance
- Reduction of high impact incidents by 25%
- Reduction in MTTR by 70%
- 90%+ tickets auto triaged by virtual supervisor

IBM

AIOps Solution/ Tools:
Cloud Pak for Watson AIOps

Impact Created by AIOps:
- AI Manager Log Anomaly Detection reduced mean time to detect MTTD by 50%
- Identified 965 anomalies before the incident was detected and ticket opened
- Improved MTTR by 43% or 40 min per incident

AIOps improves overall productivity

L&T Technologies Services

AIOps Solution/ Tools:
Nagios, Ganglia, Power Automate, PowerBI for visualization, GreenITCo for ITSM & few Cloud observability tools

Impact Created by AIOps:

- 5 Bn alerts analyzed, and the threats found were mitigated
- Ensured ~99% availability of critical HPC Cluster through proactive isolation and auto remediation
- Reduced IT incidents by 20% through automation

Bert Labs

AIOps Solution/ Tools:
AIOps Bert Platform Solution

Impact Created by AIOps:

- 30% reduction in Electricity & 20% in fuel
- From an AIOps standpoint primarily, it solves two problems one is prediction & second is optimization

VuNet

AIOps Solution/ Tools:
vuRCABot, vuSmartMaps

Impact Created by AIOps:

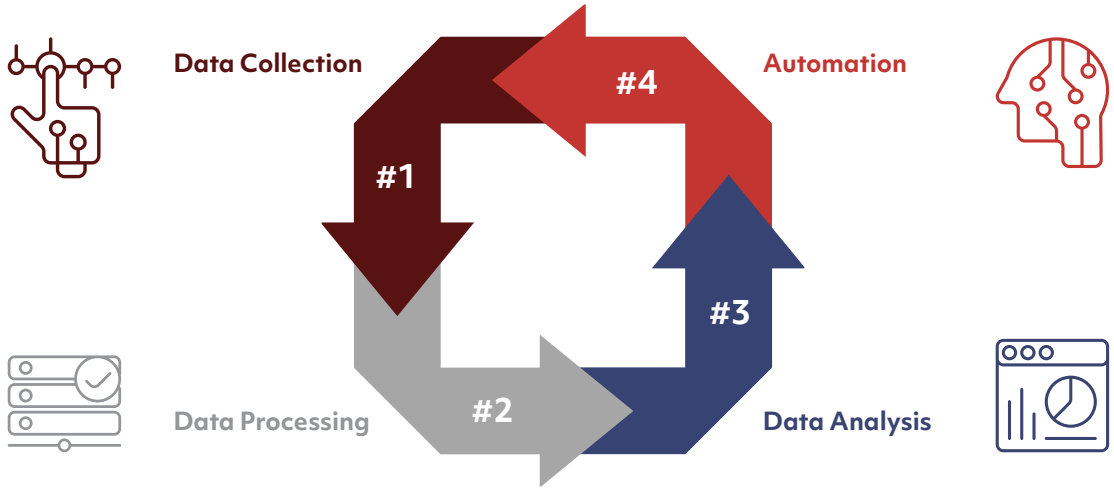
- WAN link stability improved by 40% with the help of ML driven Network Experience Index
- Anomalies based alerts in bandwidth utilization enabled to suppress 80% of static threshold based alerts

#4
nasscom AIOps Framework

#4
nasscom AIOps Framework

The AIOps end-to-end technology stack is critical to enabling organizations to get the most out of their AIOps investment. A comprehensive technology stack includes the following components:

Figure: Key Building Blocks of AIOps



Source: aims, nasscom

#1

Data Collection

The first step in any AIOps solution is to collect data from all the various infrastructure and applications in an organization's IT environment. This data can be collected from various sources such as logs, metrics, and events.

#2

Data Processing

After collecting the data, the organization needs to prepare it for analysis. This includes cleaning the data, removing errors and discrepancies, and normalizing the data for easier analysis.

#3

Data Analysis

The next step is to analyze the data using Big Data, AI, and machine learning algorithms. This analysis identifies patterns and trends in the data that can be used to identify potential problems and predict future performance.

#4

Automation/ Actionable Insights

The most crucial step is to extract actionable insights from the analysis. These insights can be used to improve IT performance, reduce costs, and improve customer satisfaction.

Solution Spotlight

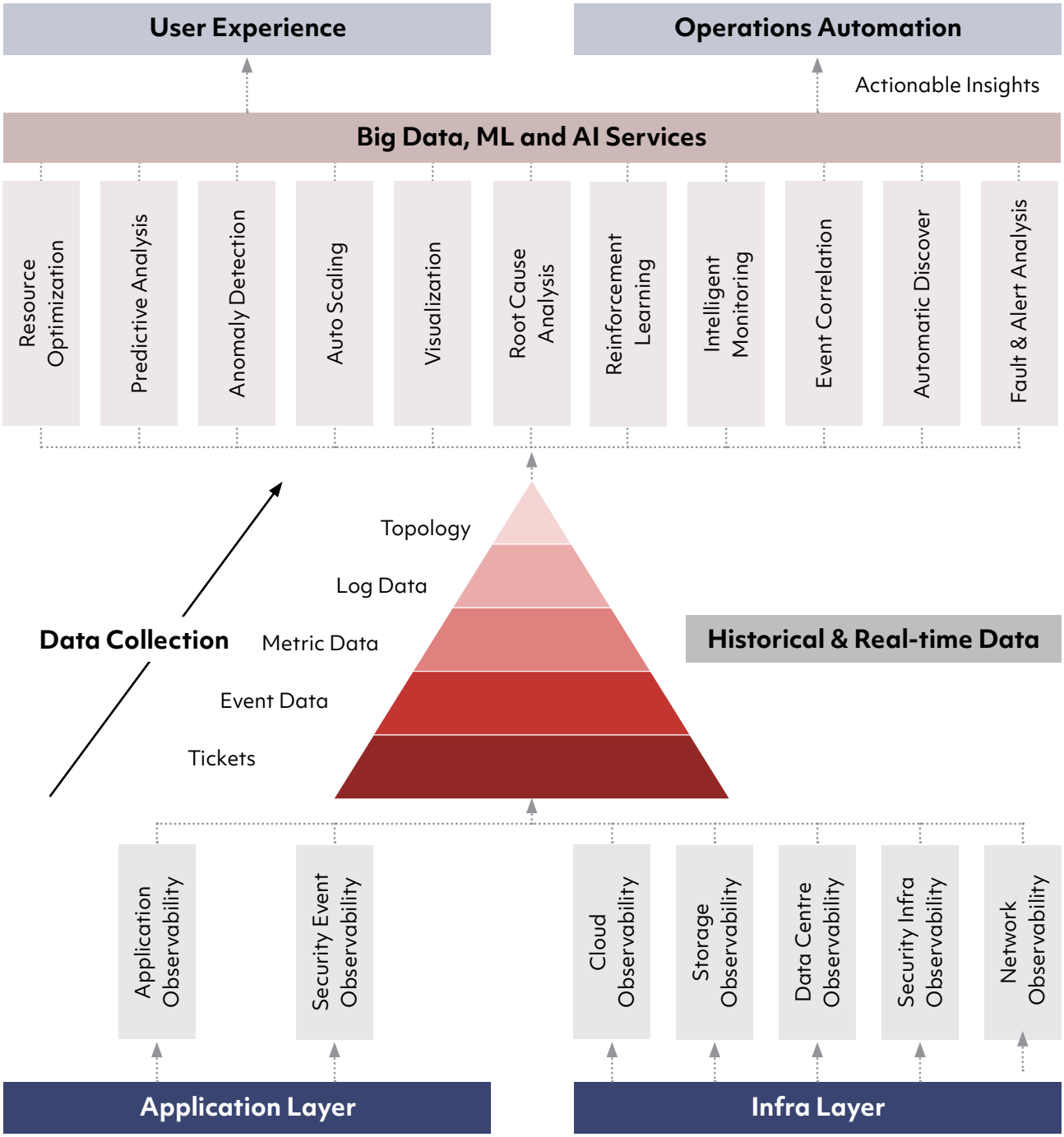
Capgemini's AIOps Solution embeds AI in an enterprise level to transform IT Operations to drive higher efficiency, accuracy & speed. It is spread across four different dimensions of AI driven operations: Application Management, Issue Resolution, Ticket Management and Voice of End-User.

The AI solution has been built using open-source technologies leveraging Advanced Machine Learning Algorithms, Deep Learning Models, Transfer Learning, Recent pre-trained NLP models to derive maximum benefit for the organization. The solution is also backed by other Capgemini offering of Data platforms, MLOps to provide end-to-end solution at an enterprise level.

End to End Tech Stack Framework

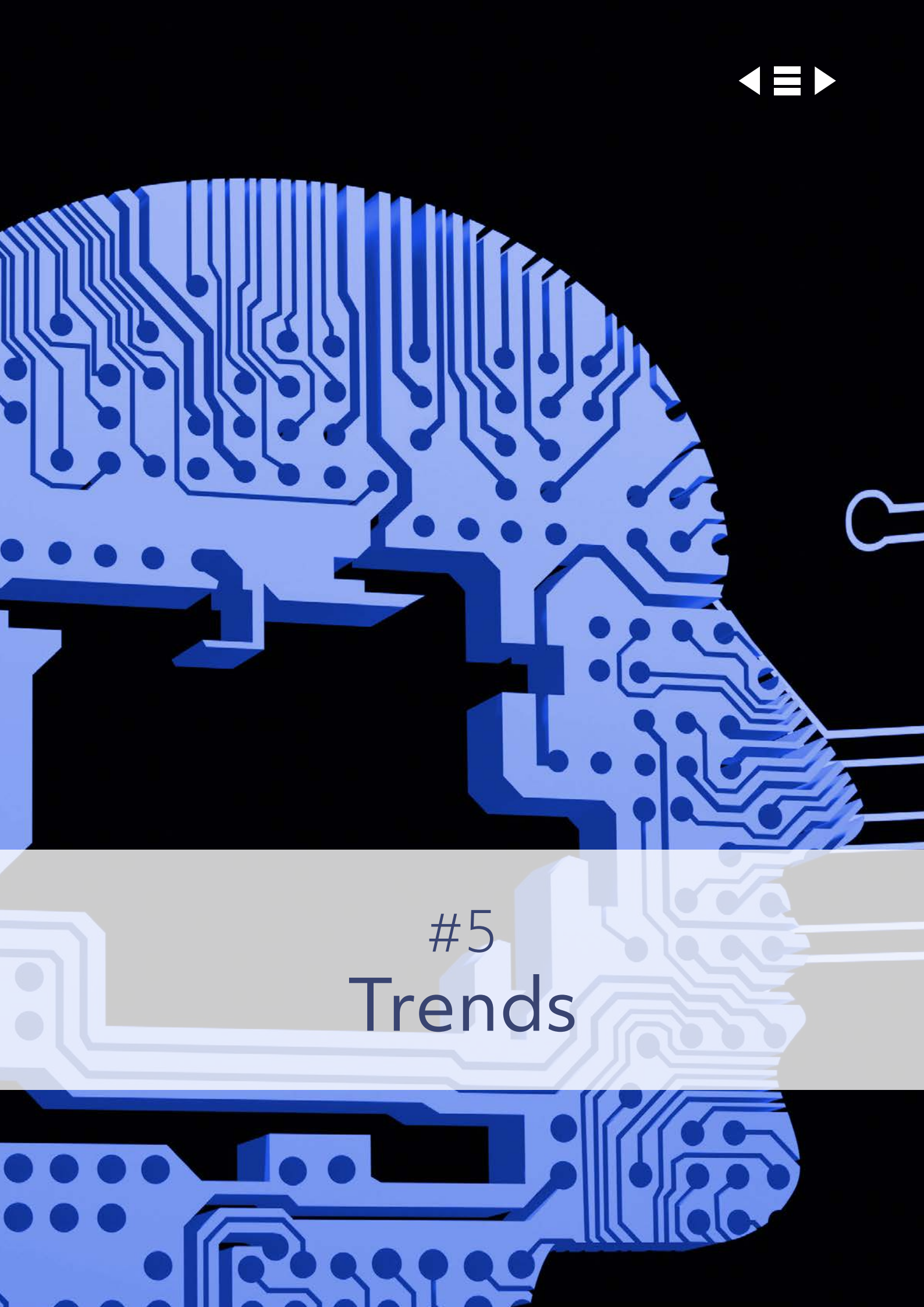
The figure below depicts a comprehensive AIOps tech stack that provides all these components to help an organization get the most out of their AIOps investment.

Overall, looking at the AIOps end-to-end technology stack helps organizations improve IT operations by reducing costs, improving performance, and increasing agility.



Source: nasscom expert interviews

A typical AIOps tech stack works on Application or Infrastructure layers. On these layers, the various functions observability is carried out such as application, security, cloud, storage, etc. The data collected from here historical and real time in form of logs, events, tickets, etc are then analysed by applying AI, ML, and big data services. This results in output of actionable insights leading to operations automation and improved user experience.



#5
Trends

#5 Trends

Current Trends

#1

IT environments are growing at unprecedented rates

With IT environments quickly scaling at unprecedented rates, traditional IT management approaches have taken a back seat. Offline, manual efforts that require a lot of human intervention don't work in the world that operates on an ever-increasing pile of big data. AIOps, on the other hand, simplifies operations by introducing automation and other relevant technologies under one umbrella.

#2

Enterprise AIOps adoption growth

There is no question that enterprises are ushering in AI technologies with their digital transformation strategies. AIOps will be integral to enterprise digital transformation moving forward. According to a 2021 PWC report[1], over 50% of businesses have either fully enabled or begun implementing AI into their workflow. IT leaders are at the forefront of this transformation. IT leaders are strategizing the use of machine learning in multiple facets of their enterprises, including sales, marketing, and security. Furthermore, enterprise operations are becoming too challenging and fast-paced for traditional practices to still be used. This is the main driver behind many digital transformations and will likely fuel the rapid growth of AIOps platforms.

"AIOps is the future of IT & business operations! Until recently, we were in the age of 'Artificial Local Intelligence (ALI)' with specialized singular functions but the advent of LLMs have heralded the advent of the age of 'Artificial General Intelligence (AGI)'. By using AGI to collect, analyse, and correlate data from across the Business and IT process stack, AIOps will transform and induce incremental improvement in operational efficiency, reduce costs, and elevate customer experience which will be industry, function as well as cloud agnostic."

Dr. Param Jeet
Director
Head of AI/ML Practice
Affine

Abhishek Dutta
Director
Data Science/AI
Affine

#3

Continuous and unending growth of data to retain

Apart from the IT environment, the amount of data that IT teams of today need to retain and explore is also increasing exponentially. Again, the traditional methods of going through this data to derive intelligence have taken a backseat. AIOps handles this complexity seamlessly, saving IT Teams a lot of time and headspace.

#4

Modern infrastructure problems require modern solutions

With more businesses looking to digitize their operations, IT no longer remains a part of a business. Instead, IT is the business of today. The consumerization of tech has changed UX for industries far and wide. As a result of this, reaction to IT events needed to occur immediately, especially when the issue impacts user experience. Also, as AI priorities have shifted from financial analysis and consumer insight to cost optimization and customer experience in the wake of the pandemic, AIOps has found a new footing. Remote and hybrid working is continually showing the potential of AIOps. According to a Transposit report[2], over 90% of IT, DevOps, and Site Reliability Engineering professionals reported an increase in service incidents. An even higher percentage claimed incidents take longer to resolve while working remotely. It is also expected for business leaders to look to AIOps to address these newfound issues.

#5

Greater computing power at the edges of networks

Another important trend that has propelled the adoption of AIOps is the ease with which cloud infrastructure has empowered lines of business to build their own IT applications. As a result of that, budgeting and control of IT have shifted from the core to the edge, and more computing power is being presented at the edges - and not just the core.

#6

AI Cybersecurity

Perhaps the fastest growing implementation of AIOps has come in the form of cybersecurity. A 2020 IBM survey[3] of over 4,000 US, EU, and Chinese businesses established that cybersecurity as the top use case for AI implementation. Companies are leveraging machine learning and artificial intelligence to detect malware and prevent cyberattacks. Many experts see AIOps as the next frontier in cybersecurity. Major players are already using these technologies for their cybersecurity needs as well. AI cybersecurity solutions can be used to detect malware and potential attacks ahead of time. These solutions learn from human behaviour and previous breaches to prevent any further ones from ever happening.

Complexity has stretched the ability of IT Ops teams to understand data and respond quickly across an environment. Existing tools and processes are not sufficient to solve the problem, paving the way for AIOps".

Veeramani Nambi
Portfolio Product Manager
IBM Automation

#6
Use Cases & Challenges

#6
Use Cases & Challenges

AIOps is a promising technology that has the potential to revolutionize IT operations. However, organizations need to be aware of the challenges associated with use cases for AIOps before implementing a solution. Here are some of the challenges that AIOps can help to solve:

Cost optimization

AIOps can help to reduce costs by automating tasks, improving efficiency, and preventing outages. For example, AIOps can be used to identify and eliminate unnecessary IT resources, such as unused servers or licenses.

Root cause identification

AIOps can help to identify the root cause of problems more quickly and accurately than traditional methods. This can help to reduce the time it takes to resolve problems, which can save money and improve customer satisfaction.

Correlation between components

AIOps can help to identify correlations between different components of an IT infrastructure. This can help to identify problems that would not be visible if each component were monitored in isolation. For example, AIOps can be used to identify a problem with a database that is causing performance problems in a web application.

Multiple analytics tools

AIOps can help to consolidate multiple analytics tools into a single platform. This can make it easier for IT teams to get the information they need to identify and resolve problems.

Lack of unified view

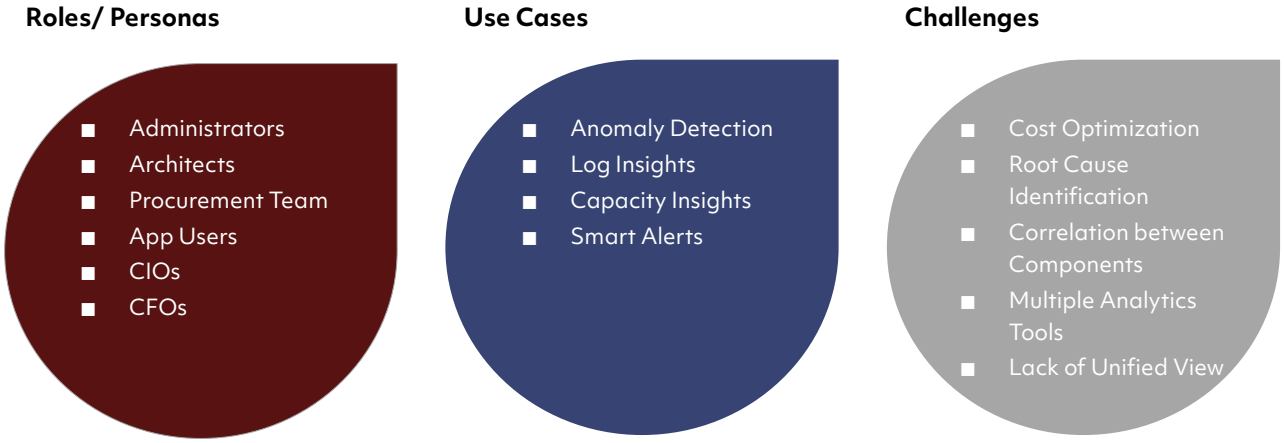
AIOps can help to provide a unified view of an IT infrastructure. This can help IT teams to understand how all the different components of an IT infrastructure are connected and how they are impacting each other.

AIOps already has the autonomous remediation capabilities armed with deeper contextual insights derived from the correlation of data from diverse sources like logs, metrics, events, and user behaviour. AIOps now possesses the power to autonomously detect, analyse, decide, and resolve common IT patterns, without human intervention. While we embrace this transformation, we must uphold ethical principles by addressing concerns regarding bias, privacy, and security."

Syed Ahmed
Sr. Industry Principal Leader,
AI & Automation Enthusiast
Infosys

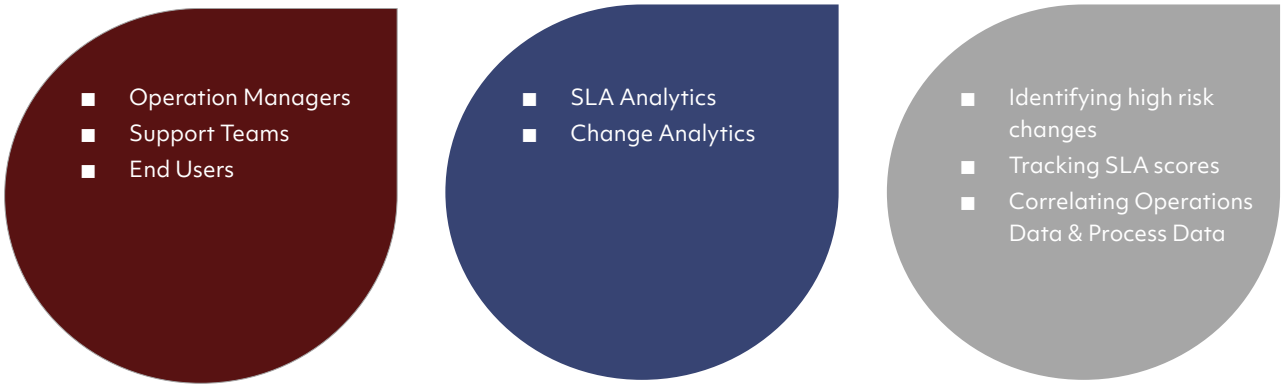
The figure below depicts the Roles, Use Cases and Challenges associated with Applications and Infrastructure, Digital Experience, and IT Service Analytics.

Applications and Infrastructure Insights



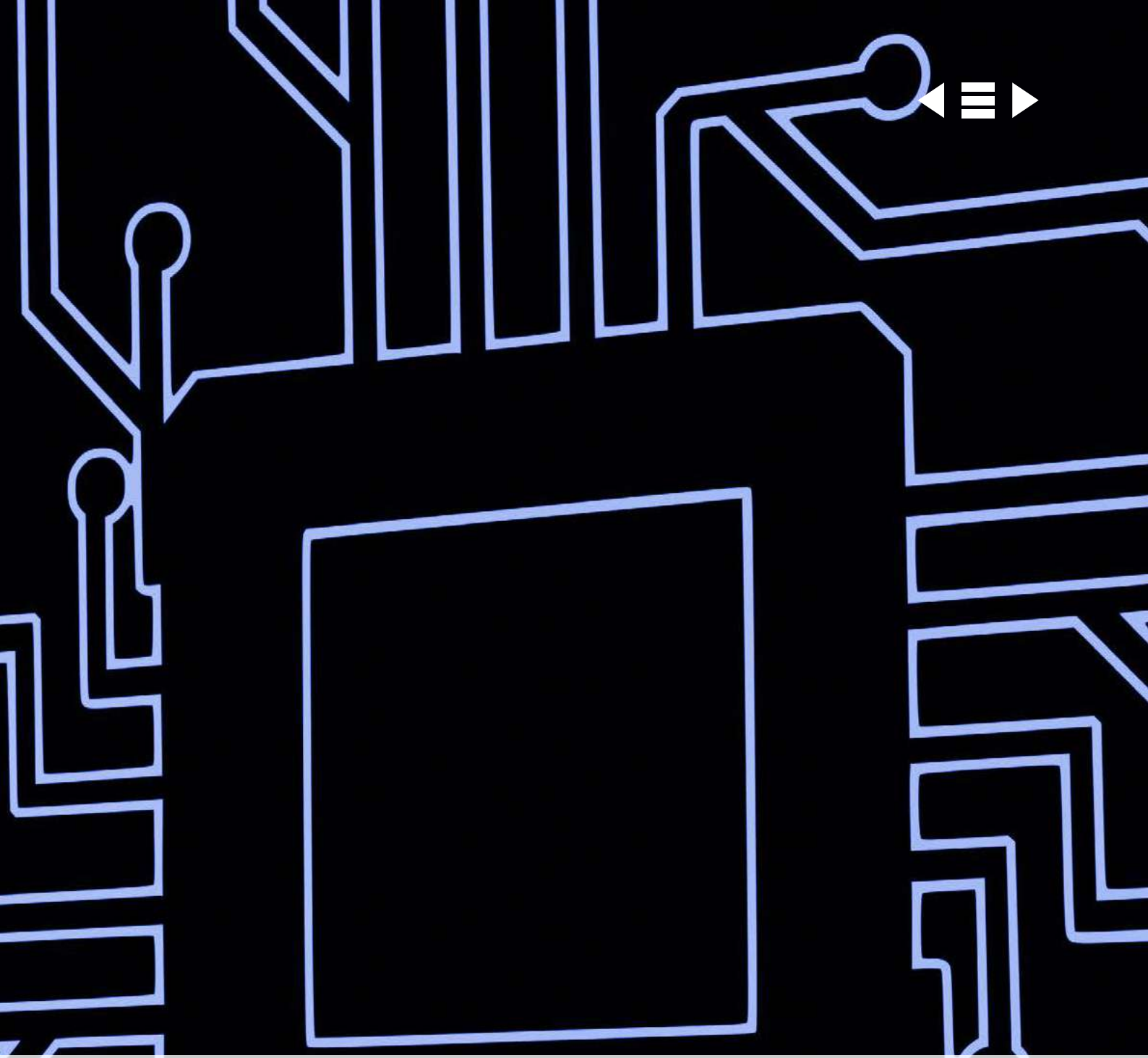
Digital Experience Analytics Insights

IT Service Analytics Insights



Source: nasscom

In practice, these use cases only provide initial relevance for IT operators. Platform users are tasked with creating greater outcomes for roles such as leaders, system administrators, architects, etc. Hence, there is a need for a playbook to get started with an end goal objective to be achieved by AIOps.



#7

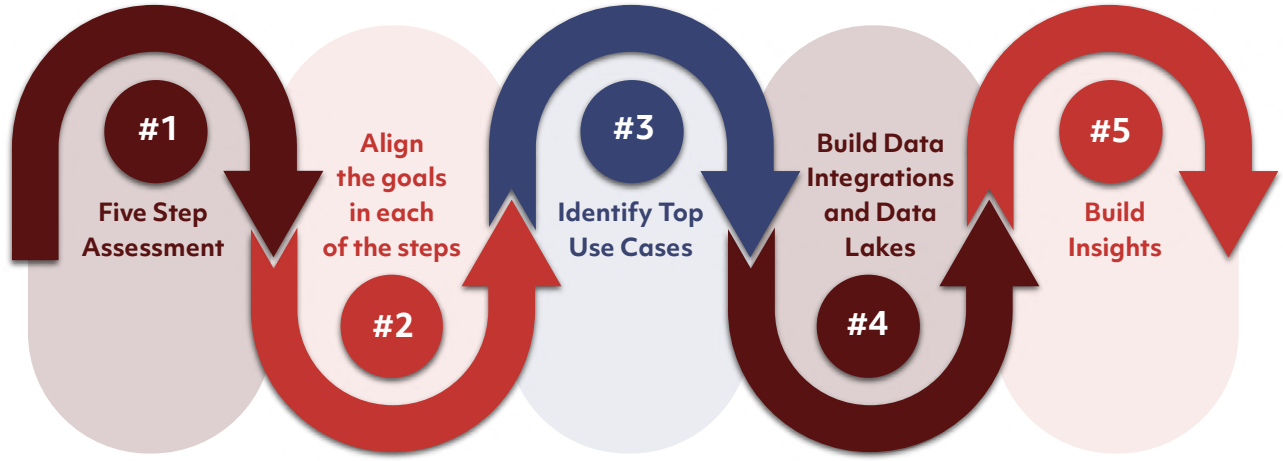
nasscom AIOps Playbook & Recommendations

#7
nasscom AIOps Playbook & Recommendations

Playbook

AIOps offers several compelling capabilities, but getting started does not have to be overwhelming. Here are a few best practices to get started:

Figure: AIOps Roadmap



Source: nasscom

#1

5 Step Assessment:

A company should start by using 5-step approach.

- **Descriptive:** Descriptive assessments can be used to identify problem behaviors, to track progress over time, and to evaluate the effectiveness of interventions
- **Diagnostic:** A diagnostic assessment is a type of assessment that is used to identify strengths and weaknesses in a particular area
- **Predictive:** A predictive assessment is a type of assessment that is used to predict future outcomes.
- **Prescriptive:** Prescriptive assessment is a type of assessment that is used to prescribe specific interventions or instruction.
- **Automation:** Automation is the process of using AI and ML algorithms to automate tasks and interventions deciphered in the above steps.

#2

Align the Goals:

In each of the steps of the 5-step assessment, align the goals to map the journey.

#3

Identify Top Use Cases:

Identify and select top use cases and then map what is available with the types of data sources.

#4

Build Data Integrations and Data Lakes:

Start building data integrations with central data lake by pulling data by use cases. A data lake is a centralized repository designed to store, process, and secure substantial amounts of structured, semi structured, and unstructured data. It can store data in its native format and process any variety of it, ignoring size limits.

#5

Build Insights:

Once data is collected, start building descriptive, diagnostic, predictive, and prescriptive insights. These insights will be iterative and will keep getting built up as per data collected over time.

How to Evaluate an AIOps Tool

The following evaluation criteria can be used to select an AIOps tool:

Criteria to Evaluate an AIOps Tool	Low	Moderate	High
1. Core Functionality: a. Monitoring b. Anomaly Detection c. Root Cause Analysis d. Automated Remediation e. Predictive Analytics f. Integration With Existing Infrastructure	✗	✗	✓
2. Performance at Scale: a. Ability to analyse large volumes of data in Real-Time	✗	✓	✗
3. Ease of Deployment and Use: a. UI/IX, Workflow b. Ease of Integration with Existing Infrastructure, Systems and Processes c. Ability to Support Cloud-Native Environments, Containerized Applications, and Hybrid Infrastructure	✗	✗	✓
3. Vendor Support and Roadmap: a. Vendor's Reputation, Expertise, and Customer Support Services b. Vendor's Commitment to Innovation c. Product Roadmap to Ensure Ongoing Updates, Enhancements, and Support d. Availability Of Resources Such as Documentation, Training, and User Communities that can assist with Onboarding and Troubleshooting	✗	✗	✓

Sample Scoring: ✗ ✓

Dr. Reddy, nasscom

Recommendations

#1

Learn about AIOps today:

It is important to get comfortable with the technology. Priorities and skills change, hence, it may be needed sooner than the organizations think.

#2

Choose a small, achievable use case:

Transformation efforts are more likely to succeed when they start small. Organisations must select a few test cases that are achievable and help them learn about AIOps.

#3

Demonstrate competence:

Organisations must discuss with peers and leaders what AIOps is all about. Demystifying technology by demonstrating simple techniques is the key.

#4

Feel free to experiment:

Several open-source, low-cost ML software options are available. Companies can experiment with AIOps and data science applications with these tools.

#5

Use existing resources:

Companies must search for data and analytical resources that may already exist within their organizations. These resources will help them get started with AIOps.

In addition, there are some important points to keep in mind while implementing AIOps:

- **Include leadership-** AIOps is a big change for the organisation, so it is important to get the leadership's buy in at the outset.
- **Build the team-** AIOps is a complex undertaking, so building a team of experts is critical. This team should include people with expertise in IT, data science, and machine learning.
- **Set realistic expectations-** AIOps is not a universal remedy. It helps improve IT operations, but it does not solve all problems.
- **AIOps is a journey,** not a destination. Implementing AIOps and witnessing the results takes time.

Source: nasscom, secondary research

"AIOPs can help organizations build resilient and reliable systems, combining the power of artificial intelligence with reactive, predictive and proactive monitoring and automation."

Prateeti Mohapatra
Manager and Sr. Research Engineer
AIOps & Observability
IBM Research Lab, India

#8
Outlook

#8 Outlook

Impact of Generative AI on AIOps

In the coming years, Generative AI will have a fundamental role in shaping the future of AIOps. **Generative AI** is a type of artificial intelligence that can create new data, such as text, images, or audio. This technology has the potential to have a significant impact on AIOps.

Here are some of the ways that Generative AI could impact AIOps:

#1 **Improved root cause analysis:**

Generative AI could be used to analyze enormous amounts of data to identify the root cause of IT problems. This could help IT teams to resolve problems more quickly and efficiently.

#2 **Automated incident response:**

Generative AI could be used to automate the response to IT incidents. This could help to reduce the time it takes to resolve problems and improve the overall availability of IT systems.

#3 **Enhanced IT security:**

Generative AI could be used to identify and respond to security threats. This could help to protect IT systems from cyberattacks.

Overall, Generative AI has the potential to significantly improve AIOps. By automating tasks, identifying root causes, and responding to threats, generative AI could help IT teams to improve the performance, availability, and security of IT systems.

“As organizations embrace digital transformation, AIOps is emerging as a crucial technology trend, enabling them to harness the power of AI to drive operational excellence and deliver seamless and resilient IT services. By leveraging ML and advanced analytics, AIOps enables proactive and intelligent monitoring, analysis, and automation of IT operations, resulting in enhanced efficiency, reduced downtime, and improved customer experience. A key strength of AIOps lies in its platform capabilities, which encompass real-time data ingestion, correlation, and pattern recognition across diverse data sources, enabling rapid detection and resolution of issues. Furthermore, AIOps platforms empower IT teams with actionable insights, intelligent automation, and predictive capabilities, empowering them to make data-driven decisions and focus on strategic initiatives.”

Brajabhusan Panda
Head of Global Digital CoE & Enterprise Architecture
Dr. Reddy’s Laboratories

Here are some examples of how generative AI is already being used in AIOps:

#1 **Splunk** is using generative AI to create synthetic data that can be used to train AIOps models. This helps to improve the accuracy and performance of the models.

#2 **Google Cloud AIOps** uses generative AI to automatically generate alerts when there are potential problems with IT systems. This helps IT teams to quickly identify and resolve problems.

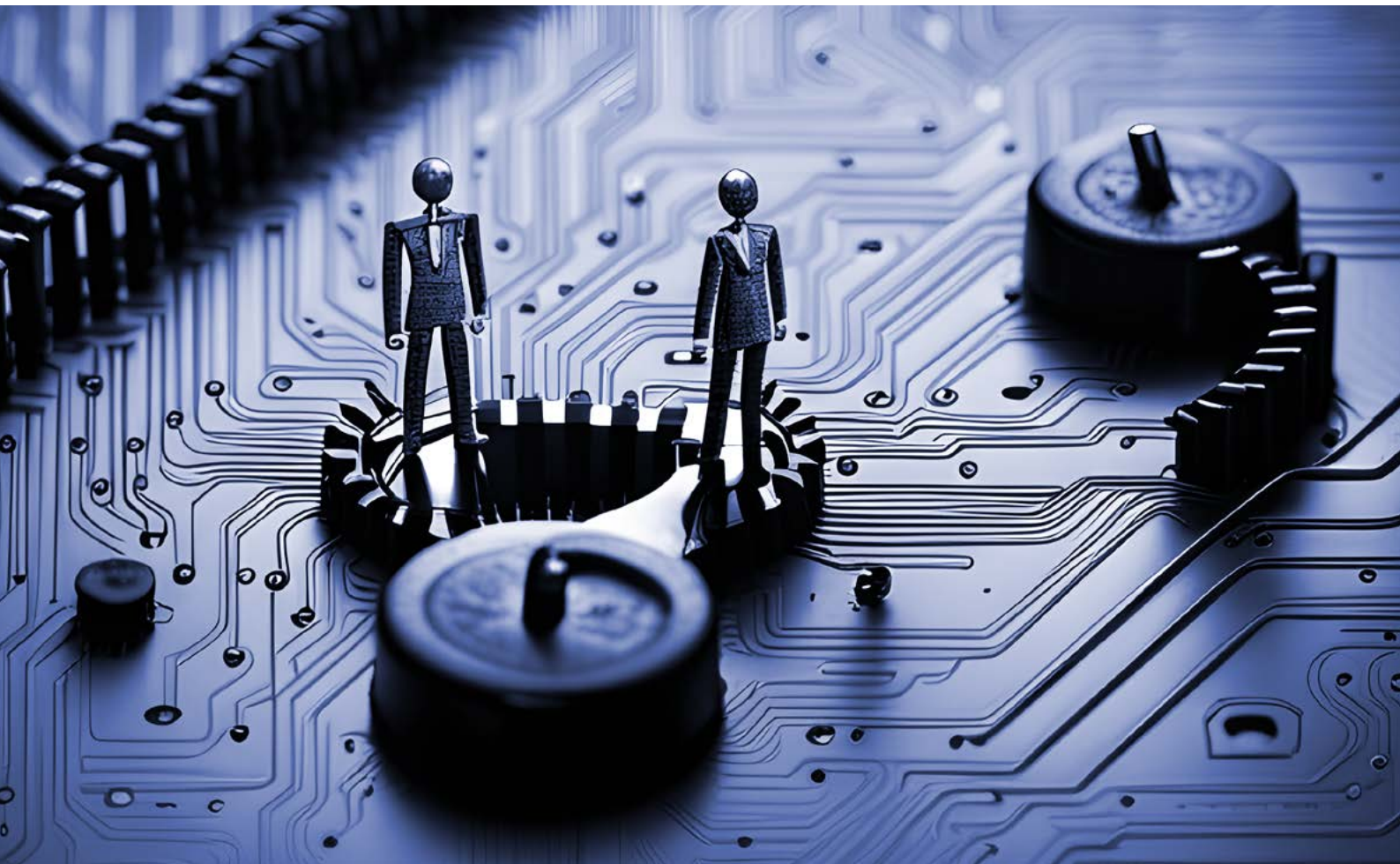
#3 **IBM Watson AIOps** uses generative AI to create personalized recommendations for IT teams. These recommendations can help teams to improve the performance of IT systems.

Source: Generative AI, nasscom analysis

As Generative AI technology continues to develop, it is likely to have an even greater impact on AIOps. This technology has the potential to revolutionize the way that IT operations are managed.

AIOps is the future of IT operations. As organizations continue to generate more data and deploy more complex IT infrastructures, AIOps is becoming increasingly important to enable organizations to effectively manage their IT operations.

To stay ahead of the curve and ensure an organization's IT systems are running at peak performance, organisations must consider implementing AIOps.



#9
Case Studies

Dr. Reddy Lab's AIOps tool efficiently identifies anomalies & identifies root causes

About

Dr. Reddy's Laboratories is an Indian multinational pharmaceutical company based in Hyderabad. Dr. Reddy's manufactures and markets a wide range of pharmaceuticals in India and more than 100 countries. The company has over 190 medications, 60 active pharmaceutical ingredients (APIs) for drug manufacture, diagnostic kits, critical care, and biotechnology.

Global Footprint

India, USA, China, Canada, Brazil, Mexico, Russia

Problem Statement

Dr. Reddy's Laboratories wanted to enhance the efficiency of its IT support function and improve overall production health. Following interventions were needed towards this:

- Reduce noise and provide intelligent alerting in order to streamline incident management and improve response times; their systems generate a vast number of alerts, leading to alert fatigue and difficulties in identifying critical issues
- Efficiently identify anomalies and determine their root causes there by enabling faster problem resolution
- Predict potential issues before they occur
- Enable automated remediation by executing predefined actions or scripts based on predefined rules and policies when an incident occurs or a change needs to be carried out
- Automated frequently repeated activities
- Centralized and unified view of IT infrastructure, applications, and performance metrics
- Promote collaboration among different teams, such as operations, development, and support by breaking down silos

AIOps Tools or Solutions

Dr Reddy's Labs chose a leading AIOps tool that frequently features in Gartner's Magic Quadrants.

Here is the set of criteria they used to evaluate the AI Ops tool landscape.

1. Core Functionality:
   - Monitoring
   - anomaly detection
   - root cause analysis
   - automated remediation
   - predictive analytics
   - integration with our existing infra
2. Performance at scale:
   - Ability to analyze large volumes of data in real-time
3. Ease of Deployment and Use:
   - UI/IX, workflow
   - Ease of integration with existing infra, systems and processes
   - ability to support cloud-native environments, containerized applications, and hybrid infra
4. Vendor Support and Roadmap:
   - Vendor's reputation, expertise, and customer support services
   - Vendor's commitment to innovation
   - Product roadmap to ensure ongoing updates, enhancements, and support
   - Availability of resources such as documentation, training, and user communities that can assist with onboarding and troubleshooting

Capgemini helped client decrease ticket management effort 10x using AIOps

About

Capgemini is a group of 360,000 people passionate about helping clients solve their most complex challenges, delivering Transformation, at scale.

With their international presence and unrivalled sector knowledge, they bring consulting, technology services, and digital transformation to their clients. Through a portfolio of offers, they are integrating 50+ years of demonstrated SI Leadership and Execution with Innovation to Realize Total Value.

Global Footprint

30,000+ Data & AI experts Globally –

- Europe – 5075
- North America – 3475
- Asia-Pacific – 2525
- Middle East – 700
- India – 18,500

Problem Statement

With traditional IT Operations support organizations face different challenges:

- Approach is purely reactive
- Higher resolution time for issues resulting in poorer customer satisfaction
- Lack of strategic insights
- Suboptimal resource utilization

As per Gartner report, $26.5 Bn is the estimated value of lost revenue every year due to IT downtime costs.

In view of the challenges and potential impacts, there is in increased focus that need to be given by organizations to enable AI embedded IT support

AIOps Tools or Solutions

AIOps Solution embeds AI in an enterprise level to transform IT Operations to drive higher efficiency, accuracy & speed. It is spread across 4 different dimensions of AI driven operations –

1. Application Management
2. Issue Resolution
3. Ticket Management
4. Voice of End-User

The AI solution has been built using open source technologies leveraging Advanced Machine Learning Algorithms, Deep Learning Models, Transfer Learning, Recent pre-trained NLP models to derive maximum benefit for the organization. The solution is also backed by other Capgemini offering of Data platforms, MLOps to provide end-to-end solution at an enterprise level.

Impact and Scale

AIOps Solution leverages vast Capgemini experience of delivering & building IT Operations Solution for clients cutting across different industry lines and geographies. Key values delivered by the solution include:

1. Detect and react to potential issues before they turn into failures
2. Reduces effort required for ticket resolution
3. Reduction in Mean Time to Resolution for tickets enabling faster issue resolution
4. Automated ticket handling without human intervention
5. Facilitates SLA adherence for tickets
6. Optimized resource planning & utilization
7. Better impact assessment enabling better preparedness

Estimated impact based on past AIOps engagements show significant gain:

- At least 8%-10% decrease in effort for management of tickets raised by external users
- At least 12%-15% decrease in MTTR (Mean Time To Resolve) for tickets generated due to incidents

LTTS reduced IT incidents by 20% through AIOps implementation

About

LTTS (L&T Technology Services) is a global engineering services company that provides innovative solutions and services to clients across various industries such as aerospace, automotive, semiconductors, telecom, and healthcare, among others

LTTS offers a range of services such as product design and development, engineering analytics, digital engineering, and smart manufacturing. The company has a strong focus on innovation and has developed several cutting-edge solutions in areas such as 5G, IoT, AI, and machine learning.

Global Footprint

LTTS has a global presence with operations in North America, Europe, Asia-Pacific, and the Middle East.

LTTS is headquartered out of India

Problem Statement

Manage, Monitor, and Remediate

- How to manage ever changing threat landscape
- How to ensure maximum uptime and availability of IT services
- How to improve overall IT operational efficiency and resilience

Employee Experience:

- Move away from SLA to XLAs

Scalability / Agility:

- How to cope-up with dynamic business scenarios
- How to eliminate points of failure
- Move away from incident-based reactive support to proactive support

AIOps Tools or Solutions

Nagios, Ganglia, Power Automate, PowerBI for visualization, GreenITCo for ITSM & few Cloud observability tools

Impact and Scale

Cybersecurity

- Threat hunting and monitoring of alerts - 5 Bn alerts analyzed, and the threats found were mitigated. Not possible without AI
- Behavioral analysis & anomaly detection to prevent unauthorize access & security breaches

HPC's and critical Infra

- Ensured 99.99999 % availability of Critical HPC Cluster through proactive isolation and auto remediation

IT Operations

- Reduced IT incidents by 20% through automation
- Improved CSAT score to 4.5/5
- Supported 30% increase in the overall organization headcount with the same IT support team

Employee Experience

- Enabled AI powered chatbots for personalized & proactive service
- Predict potential issues and proactive address potential downtime & interruption

LTI Mindtree's AIOps implementation lead to $2.5 Mn annual IT cost reduction

About

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 84,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale.

Global Footprint

Worldwide

Problem Statement

- IT Automation for a large manufacturing conglomerate
- Complex infra environment, with highly federated decision making and operations management at the BU level
- Ongoing infra transformation- Hybrid Cloud on Azure and Hyperflex, ITSM transition from BMC to ServiceNow and enabling Agile and DevOps for Infra Management

AIOps Tools or Solutions

- Azure Devops
- Ansible
- bmc Control-M
- Servicenow

Impact and Scale

- $2.5 Mn annual IT cost reduction
- 45K hours saved through automation
- Zero Unplanned outage in last 24 months
- 58% reduction in request / incident MTTR

Bert Labs' AIOps implementation effectively optimizes and predicts issues

About

Bert Labs was incorporated in 2017, to help the clients in their Digital Transformation be it a work environment, factory setting, or manufacturing unit, for consumers, businesses, and governments.
Bert Labs is innovation at the inter-section of Artificial Intelligence -Internet of Things (AI-IoT), solving complex industrial problems, energy efficiency improvement and production efficiency improvement for large corporations across industry verticals, to help them achieve their year-on-year Sustainability, Productivity, and Capital Efficiency goals. Bert Labs helps customers leverage their software and hardware to generate customized applications, delivered within the nerve center of where they are located.

Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

To streamline the process of drug discovery, to drastically reduce in time (years) in drug discovery lifecycle, compound screening, preclinical testing of lead component, checking, testing during trial phase (1, 2, 3), regulatory approval requirement and drug candidate identification and reaction log maintenance

AIOps Tools or Solutions

From an AIOps standpoint primarily, they are solving two problems one is prediction & second is optimization. It is a sensitive, complex process environments. In an unsupervised learning as part of the AIOps, very few companies globally are doing this and Bert Labs is doing it successfully. So as part of unsupervised learning, they work on reinforcement learning (RL). So that is a combination of two very powerful neural networks.

Rest APIs integrated with Bert Nova Microservices, for continues flow of data aggregation, data preprocessing on live streaming. All other tools/solutions are built and created in house for the requirements.

Impact and Scale

AI –IoT solution can reduce the amount of time required for search and manufacturing of a novel drug

- Drug retrosynthesis can reduce raw material usage or increase yield by finding the best pathway for synthesis in lab -drug synthesis reducing costs up to 60%
- Creating novel molecules which cannot be synthesized in the lab previously
- Creation of new molecules enables drug discovery for multiples targets at the same time
- Optimizing manufacturing yield by finding the best route of synthesis, catalysts regents, etc.
- Finding best route of synthesis can reduce costs by 20-50%
- Predicting whether a selected drug will pass the pretrials and trials and choosing the ones which pass
- Reducing trial failures by predicting the probability of a drug to fail hence reduce losses

Infosys helped client achieve cost savings of $12.8 Mn using its AIOps solutions

About

Infosys is a global leader in next-generation digital services and consulting. They enable clients in more than 56 countries to navigate their digital transformation.

In a journey of over 40 years, they have catalyzed some of the major changes that have led to India's emergence as the global destination for software services talent. They pioneered the Global Delivery Model and became the first IT Company from India to be listed on NASDAQ.

Global Footprint

Global

Problem Statement

A British multinational oil and gas company customer wanted to have mature process with significant dependencies on external teams, improve efficiency and cost, not able to access delicate information on their daily activities reducing the manual touch points.

AIOps Tools or Solutions

They used Infosys LEAP for:

- **Zero Touch Automation -** Provide provision for automate incident resolution, service request fulfilment, invoke RPA bots for User access, Post Deployment Validation, Reconciliation tools
- **Service Reliability Engineering -** EOD Monitoring, Application Health Check, Build / Integrate Maintenance tools into the Portal – Jenkins, ADO, patch for windows server etc. - Start/stop – AWS/EC2, OpenShift Pods, Windows
- **Services Innovation and Agile -** View product backlog items from ADO/ServiceNow and act on product backlog item/incidents/change requests, display related tickets, predict assignment group / assignments, invoke resolutions / workflows

Impact and Scale

- **Cost savings of $12.8 Mn,** Agile AMS rolled out for **16 DevOps teams**
- **20% effort savings** for key operational activities
- **5 API integrations completed** for top 5 client invested tools - ServiceNow, Azure DevOps, Automation Anywhere, AWS Cloud watch, Splunk
- **40 automation workflows deployed,** and total 125 planned to deploy

VuNet's AIOps Tool improved WAN link stability by 40%

About

VuNet Systems is a next-gen visibility and analytics company that uses full-stack AI & Big Data analytics to accelerate digital transformation within an organisation. vuRCABot, is VuNet's AIOps Product to vuSmartmaps, a Business Journey Observability platform.

vuRCABot provides accurate identification of incidents and an accelerated Root Cause ecommendations up to 10x faster than traditional methods using an ensemble of AI, ML and advanced statistical models.

Global Footprint

India, Bhutan, Middle East

Problem Statement

- Large Indian public sector bank client
- Monitoring traffic, performance, logs and traps generated by 65,000 + network devices of various types spreads across multiple data centres and branches was a huge challenge
- Lack of unified visibility on overall health and performance of WAN links
- Unable to identify abnormal behaviours in bandwidth utilization
- No easy way to compare the performance of various ISP provides across locations to make informed decisions
- Manual capacity forecast by collating multiple dataset were not providing accurate and effective outcomes

AIOps Tools or Solutions

- vuRCABot by VuNet Systems
- vuSmartMaps by VuNet Systems

Impact and Scale

- WAN link stability improved by 40% with the help of ML driven Network Experience Index which precisely highlights the problematic links along with the impacted golden signal
- Anomalies based alerts in bandwidth utilization enabled to suppress 80% of static threshold based alerts
- ISP Analytics provided an real-time comparative view on ISP performance and highlighted poorly performing ISP's to take corrective action
- Capacity forecasting ML models were able to categories the WAN links based on historical and seasonal bandwidth utilization to deliver data driven accurate and cost effective forecasting report
- VuNet's Inbuilt MLOps layer and hybrid lambda architecture ensured the relevance and accuracy of ML Models on real-time basis

AIOps solutions by Affine.AI resulted up to $2Mn in annual cost savings

About

Affine.AI is a leading professional services & solutions firm, enabling global enterprises to affect their transformation & innovation, leveraging the unique **Trifecta Of AI, Data-engineering & Cloud.** Affine combines the **Hyper-convergence Of AI, Data-engineering & Cloud,** with its deep industry knowledge, particularly in Manufacturing, Gaming, CPG, and Technology segments. Affine demonstrates thought leadership in all relevant knowledge vectors by investing heavily in research through its highly acknowledged Practices Teams and strong academia relationships with reputed institutions like UC Berkeley and premier IITs

Global Footprint

- North America
- Europe
- Asia

Problem Statement

- As ODW servers have a limit to memory & CPU usage, inefficient & expensive queries may impact on server performance & its health which may result in unscheduled downtime of servers and thereby causing downtime for Enterprise system and opportunity cost to the client
- As per IDC, approx. **$5K Can Be Attributed As Lost Opportunity & Operational Delay Cost** for every 1 min of unscheduled downtime of enterprise servers
- On an average the client faced up to **3 Hrs Of Unplanned Downtime** owing to crashes in a 6-months period. Considering the dollar value impact for every 6 months to be ~$900K - 1 Mn, over two years it's an operational impact of nearly $4 Mn
- Hence, automated monitoring of the servers needs to be used to check impact of queries, syncing & replication on the system health

AIOps Tools or Solutions

Affine developed a sophisticated **AWS Based AI Solution To Automate The Overall Process Of ODW Server Health Monitoring** by enabling the system to deal with issues such expensive queries & recommended the decision on terminating or pausing the queries in near real time using ML Algorithms and cloud-based deployment for the AIOps Solution. Core components include:

ML based Query & User Profiles: Classify queries as Safe & Unsafe Queries & Users which may have impact on system performance

AI Decision Engine: Analyse Query & User Profiling attributes along with ODW server health attributes, to take proactive action

Automated deployment using AWS services in QA & Production environments

Impact and Scale

- **Cost & Revenue Optimization:** For each Enterprise level server, the deployed solution was able to provide the client with with $1.8-2 Mn worth of annual cost savings
- **Operational Efficiency:** The deployed solution was able to reduce unplanned downtime by ~80%, significantly boosting operational efficiency
- **Responsible AI:** The solution addresses Responsible AI with data privacy, data security and explainability
- Due to **successful implementation** of this solution, client has already planned to customize, build and deploy the same solution for their 2 other enterprise servers which are at high risk. For each Enterprise level server $500-900K worth of cost savings should be expected

IBM's Watson AIOps solution reduced mean time to detect MTTD by 50%

About

IBM is an American multinational technology corporation headquartered in New York and present in over 175 countries. It specializes in computer hardware, middleware, and software, and provides hosting and consulting services in areas ranging from mainframe computers to nanotechnology. IBM is the largest industrial research organization in the world, with 19 research facilities across a dozen countries.

Global Footprint

Global

Problem Statement

- Client was a leading financial group in retail banking in Europe with >35k employees
- Problem: Application service was unavailable customers were able to submit a ticket for help, but the ticket was not received by the call center
- Use case: Application component failure Call-routing dispatch component logic between digital assistant and call center failed
- Current state: Monitoring tools did not surface issue before call center team called back in on their anomaly observation

AIOps Tools or Solutions

Cloud Pak for Watson AIOps

Impact and Scale

- AI Manager Log Anomaly Detection reduced mean time to detect MTTD by 50%
- POC leveraged Watson AIOps log anomaly detection capability to traceback to actual errors in the logs leading to call routing failures
- Identified log anomaly not previously captured anywhere else or detected by any of the existing monitoring tools
- Log anomaly detection identified anomalous log messages without any previous rules based on data trained on normal operations of application

LTI Mindtree's Canvas Opsight solution reduced efforts by 25%

About

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 84,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale.

Global Footprint

Worldwide

Problem Statement

- Leading European payment services group
- Modernizing IT Ops by enabling digital payments for merchants, consumers and banks across the entire payments value chain
- Enable self funded transformation by reducing TCO and fund technology transformation program & cloud adoption
- Business case to integrate IT organizations of company's subsidiaries which is aligned with business need
- Heavy technology investment done however low level of AI /Automation application in all units

AIOps Tools or Solutions

Canvas Opsight

Impact and Scale

- 30% TCO reduction opportunity from the recommended transformation roadmap (target operating model and AIOps)
- Consolidation of suppliers is identified as an opportunity to improve quality, reduce freight and overall operations
- ~400+ processes identified for automation with 25% potential in reduction of efforts & 60% possible MTTR improvement via automation
- ~80% existing tools are retained and recommended with improved configuration for maximum ROI from investment & 5 tools are recommended to implement centralized AIOps platform for the company

Bert Labs's AIOps solution made an impact by energy efficiency improvement of 30%+ in HVAC utility

About

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Bert Labs is innovation at the inter-section of Artificial Intelligence -Internet of Things (AI-IoT), solving complex industrial problems, energy efficiency improvement and production efficiency improvement for large corporations across industry verticals, to help them achieve their year-on-year Sustainability, Productivity, and Capital Efficiency goals. Bert Labs helps customers leverage their software and hardware to generate customized applications, delivered within the nerve center of where they are located.

Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

In a Class D Pharma clean room to manage ACPH (Air Changes per Hour), DP (Pressure Differential), Temperature and RH (Relative Humidity) to maintain the drug efficacy

Improving productivity, through process cycle time reduction and reduced stoppage times

- Flexibility in manufacturing
- Improved process efficiency & equipment efficiency
- Unit Operations digitalization & control
- Reduced Quality deviations and investigation time

AIOps Tools or Solutions

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Rest APIs integrated with Bert Nova Microservices, for continues flow of data aggregation, data preprocessing on live streaming. All other tools/solutions are built and created in house for the requirements.

Impact and Scale

- Achieve business transformation goals on ESG, Sustainability, Energy, Carbon, Manufacturing, Supply Chain, Capital Efficiency, Revenue Sales & Profitability of a pharma manufacturing unit
- Complete control of pharma manufacturing - OSD Tablet Granulation - Blending - Compression - Coating - Packing, Digital Twin for Capsule Filling
- Energy efficiency improvement of 30%+ in HVAC utility
- Bert Platform Solution in Formulation, API and Sterile API manufacturing for improving the production efficiency
- Overall equipment effectiveness (OEE) & asset utilization (AU) for efficiency of the business. Higher the utilization translates into increased overall production efficiency and profit margin

Upon these success, rapidly scale up over the next 12-24 months in energy efficiency improvement on HVAC utility across all the plants for production efficiency improvement in the formulation and API manufacturing process.

Infosys LEAP AIOps solution helped achieve 99.4% noise suppression from alerts to incidents

About

Infosys is a global leader in next-generation digital services and consulting. They enable clients in more than 56 countries to navigate their digital transformation.

In a journey of over 40 years, they have catalyzed some of the major changes that have led to India's emergence as the global destination for software services talent. They pioneered the Global Delivery Model and became the first IT Company from India to be listed on NASDAQ.

Global Footprint

Global

Problem Statement

US based healthcare insurance provider client wanted to transform its IT operations, and to improve efficiency, strengthen compliance, improve delivery quality, reduce operational cost and enhance stability.

AIOps Tools or Solutions

They used Infosys LEAP to:

- Eliminate noise and create actionable incidents based on correlated events
- Perform self-healing actions through automation workflows and resolver BOTs
- Automated assignment and response of incidents, SRs and HR Tasks
- Enforcement of better incident management through automation at creation, routing and resolving steps
- Automated business reports generation
- Email Bots to monitor DBA mailbox and Auto incident creation

Impact and Scale

- **99.4% Noise Suppression** from Alerts to Incidents
- **48 Mn+** Events/Alerts processed
- **95% of INC/SR auto-assignment** for 102 assignment groups resulting in ~100% response SLA
- **38k+ self-healed incidents**
- **320k+ of Auto assignment incidents**
- **58,248 automated incidents & MTTR Reduction** by 28 mins/incident
- **Overall, $1.2 Mn** savings and 35 FTE savings

GAVS AIOps solution ZIF helped in 70% first point resolution

About

GAVS Technologies is a leading digital transformation company that offers innovative solutions and services to enterprises worldwide. With its headquarters in Chennai, India, GAVS Technologies has established a strong global presence, catering to diverse industry sectors such as healthcare, banking, manufacturing, and retail. The company leverages cutting-edge technologies like artificial intelligence (AI), machine learning (ML), and automation to help businesses enhance their operational efficiency, reduce costs, and drive customer satisfaction. GAVS Technologies' commitment to delivering exceptional value through its customer-centric approach and domain expertise has earned it a reputation as a trusted technology partner.

Global Footprint

US, India and Middle East

Problem Statement

The client is a comprehensive healthcare provider. The client offers comprehensive medical services to a wide range of people. The organization serves individuals of all ages and socioeconomic backgrounds at its several medical centers located around the region. The healthcare client faced multiple challenges in maintaining its IT infrastructure and assuring cybersecurity. In order to handle sensitive patient data that may be the target of cybercriminals, the client required a strong and secure IT infrastructure. The client also faced IT infrastructure difficulties like dealing with legacy systems, not able to manage different systems and applications, and maintaining the network infrastructure. The client was not able to oversee its various connected devices properly, which made managing and securing them all difficult.

AIOps Tools or Solutions

- ZIF used advanced technologies like Transaction Journey Mapper (TJM) and Indicator of Compromise (IOC) to analyse massive amounts of data and provide insights that would be difficult for humans to detect
- ZIF integrated with Open Threat Exchange (OTX) which allowed the organization to receive real-time threat intelligence, enabling them to proactively identify and address potential issues before they become significant problems
- ZIF automated all aspects of security operations, from threat detection to incident response, and eliminated the need for human analysts to manually monitor and investigate security events, thus helping in achieving Zero SOC

Impact and Scale

- Monitored and managed multiple systems and applications, including legacy systems that are no longer supported
- Handled the complexity of the healthcare client's IT environment, including on-premises and cloud-based systems, and the increasing number of connected devices
- Increased availability and reliability of critical patient care systems, such as EHRs and PACS, by up to 99.99%
- 40% reduction in IT operations costs
- Utilizing predictive AI-enabled SOC operations for proactive protection against cyber threats
- 99% SLA adherence
- Reduction in the time required to detect and respond to potential threats by up to 80%
- Reduction in the time required to recover from a security attack by up to 50%
- 70% First Point Resolution (FPR)
- Improved Mean Time to Resolve (MTTR) for incidents
- Prediction of events/incidents prior to occurrence helped prevent major outages

Bert Labs AIOps platform is bringing an average of 52% energy savings

About

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Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

Commercial Buildings' HVAC Utility System is an energy guzzler. If there is a system which can control energy requirements real time, share updates on health of the system involved, check the air quality and work on its improvement, power usage and manage the use of the energy through a simple a dashboard access and meanwhile help in Decarbonization, Zero Carbon, Energy Efficiency Improvement, Productivity & Capital Efficiency Goals.

AIOps Tools or Solutions

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Rest APIs integrated with Bert Nova Microservices, for continues flow of data aggregation, data preprocessing on live streaming. All other tools/solutions are built and created in house for the requirements.

Impact and Scale

Bert Labs Technology Platform is bringing an average of 52% Energy savings and 52% reduction in carbon footprint across all the blocks at Unilever House (HO of HUL), when compared with previous week operation in similar weather conditions, over & above Building Management System, Demand Flow & Air Flow Optimization, Improved Productivity, Energy Efficiency Improvement Solution from another Global Technology Giant

This is a landmark AI-IoT execution of this scale, size & complexity in Unilever eco-system, in India, in the world; with 2000+ IoT devices (Bert Maximus), Bert Qrious, Bert Nova and Bert Optimus -Bert Geminus, executing 360 degrees fully automated controls over 600 equipment in this 1million sq. ft. office building, housing 3000 people

In global 80+ commercial buildings of a leading global FMCG company in 54 countries globally -UK, Netherland, other countries in European Union, U.S. Latin America, Asia for energy efficiency improvement, and carbon footprint reduction

Bert Platform Solution is overriding existing Control System from world's largest technology conglomerate and existing Analytics from one of world's largest cloud service providers, for bigger impact

IBM through its Watson AIOps solution reduced MTTD by 55%

About

IBM is an American multinational technology corporation headquartered in New York and present in over 175 countries. It specializes in computer hardware, middleware, and software, and provides hosting and consulting services in areas ranging from mainframe computers to nanotechnology. IBM is the largest industrial research organization in the world, with 19 research facilities across a dozen countries.

Global Footprint

Global

Problem Statement

- Client was a Taiwanese computing company, promotes technological transformation through national R&D
- Problem: Intermittent application service issue customers had inconsistent application access experience with key application
- Use case: Network/router failure Problematic router anomalies caused intermittent network issues
- Current state: Current monitoring tools created too much noise to clearly understand the root cause

AIOps Tools or Solutions

Cloud Pak for Watson AIOps

Impact and Scale

- Identified 965 anomalies before the incident was detected and ticket opened
- Reduce MTTD from 11 minutes to 5 minutes: 55% improvement of MTTD! Scaled over hundreds of events a year, that's hours of time repurposed for savings or innovation
- By training and testing logs, the output is a Slack alert which captures anomalies before the incident occurs, saving organizations time and resources
- ChatOps, Metric Manager and AI Manager were able to identify 965 anomalies before incident, reduced MTTD by 55% (6 min an incident), and provided a single story (ChatOps) experience of the incident for faster resolution

LTI Mindtree's UIPATH AIOps solution saves business nearly $40,000 during peak season

About

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Global Footprint

Worldwide

Problem Statement

- Leading manufacturer for high performance blenders
- Improved shipping process cycle time & productivity for shipping manager through process automation for a US based manufacturing company
- Accelerating the shipping process during peak season
- 75% of orders are single orders
- 25% orders are multiple orders
- Each order takes 5-10 mins for processing
- Training 50+ new operators during peak season
- Considerable cost to handle high demand

AIOps Tools or Solutions

UIPATH

Impact and Scale

- Each order takes < 30 sec after automation
- ~$40,000 business saving in peak season
- 7.1% digitization implemented in WMS

Bert Labs' AIOps Bert Platform Solution helps reduce power and fuel consumption

About

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Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

Reduction in the energy usage and waste of paint in a paint shop in an automobile manufacturing plant

AIOps Tools or Solutions

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Impact and Scale

Bert Labs through its AI-IoT enabled Bert Platform Solution (BPS) (Bert Maximus, Bert Qrious, Bert Geminus, Bert Nova & Bert Optimus) is helping one of the leading automobile manufacturer in India to reduce the power and fuel consumption Complimenting their Production, Quality & Delivery targets

Artificial Intelligence brings greater precision and IoT devices can help in detecting the air quality and dust particles in the paint shop

Automotive paint shops must meet the highest demands for maximum availability, energy efficiency, round-the-clock production, and operating in a harsh production environment. Bert Platform Solution and products in automotive industry now can develop and simulate robotic operations of the paint processes, including tooling and peripherals, can enhance communication and coordination among manufacturing disciplines, enabling smarter decision-making.

Infosys's AIOps solution implementation led to 99% of manual effort savings

About

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Global Footprint

Global

Problem Statement

A German multinational pharmaceutical and biotechnology company customer was facing challenges in dealing with:

- Manual, time-consuming process of job execution, monitoring & AWS platform administration
- Inconsistent Data quality checks in CYRUS application which was newly deployed in Big Data stack
- Manual validation in outbound files & no centralized tracking to identify recurring source file delays from vendors

AIOps Tools or Solutions

They used Talend, Unix and Custom Scripts to deliver:

- E2E automation of inbound files quality check and creation of job calendar with Talend
- Reusable metadata driven Talend job which downloads files and copies into target path.
- Scheduled Talend job which checks for table refresh and sends alert via email.
- Automation using Unix scripts to get inventory list for AWS cloud instances, directory deletion and pre/post patching activities.
- Stored procedures to automate validation of Incentive Compensation and key accounts analysis.
- Automated validation for publishing master data.

Impact and Scale

- Overall savings of **~532 person hours per month**
- **18% incident reduction** with **$380K savings**
- **99% of manual effort savings** in data publish activity
- **230 person hours / month savings** in job execution
- **~$280K annual savings** from automation / optimization of platform resources

GAVS AIOps solution deployed proactively detected 95% of critical incidents

About

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Global Footprint

US, India and Middle East

Problem Statement

The Client is a pioneer in housing finance in India, headquartered in Mumbai, India. The client has a widespread network of interconnected offices across India, and outreach programs in several towns and cities, ensuring a seamless experience for home buyers and existing customers.

The client had a business imperative to provide consistent performance of business applications -particularly the critical ones used in their month-end operations. The absence of full stack monitoring integrated with correlation and predictive capabilities led to unplanned service outages. During month-end operations, the number of high-impact incidents were much higher, and performance of the applications also deteriorated. Support for critical incidents occurring after-hours routinely consumed personal time of IT staff. They were in immediate need of a powerful solution that would detect high impact incidents in advance, help them reduce such incidents and thereby improve the reliability of their services.

AIOps Tools or Solutions

GAVS implemented the following capabilities of its proprietary **AIOps Platform Zero Incident FrameworkTM (ZIF™):**

- Full-stack monitoring to monitor all components (servers, storage, network devices)
- Application Performance Monitoring (APM) to provide deep insights into application performance & direction for user experience enhancement
- Intelligent event correlation
- Predictions to detect incidents in advance
- Remediation of issues before they strike operations

Impact and Scale

- Detection of 95% of high impact incidents in advance
- Continuous monitoring of infrastructure, applications, and user experience ensures high availability and reliability
- Reduction of high impact incidents by 25%
- Reduction in MTTR by 70%
- Clear application recommendations to improve user experience & application health
- Enhanced business service reliability through proactive remediation of simmering issues
- IT bandwidth freed up to focus on priority initiatives

AIOps implementation by Bert Labs resulted in 25% cost reduction

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Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

- To bring down the cost involved in cement manufacturing
- To manage cement manufacturing equipment -Raw Material Mill, Pre Heater & Calciner, Rotary Kiln, Cooling & Cement Milling, furnace, fans, Coal Mills, Bag Filter, Heat Exchanger and Air filters remotely

AIOps Tools or Solutions

From an AIOps standpoint primarily, they are solving two problems one is prediction & second is optimization. It is a sensitive, complex process environments. In an unsupervised learning as part of the AIOps, very few companies globally are doing this and Bert Labs is doing it successfully. So as part of unsupervised learning, they work on reinforcement learning (RL). So that is a combination of two very powerful neural networks.

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Impact and Scale

- Bert Platform Solution for cement manufacturing unit helps in energy efficiency improvement and production efficiency improvement
- Bert Platform Solution is overriding fuzzy logic powered control system of world's largest cement plant technology provider, for bigger impact
- Bert Platform Solution -Digital / AI solutions can strengthen the existing processes to make cement manufacturing more robust, environment friendly and efficient by leveraging on the existing level of automation. Equipment level, process level and supply chain can benefit with digitization.
- Process and equipment level at the pyro process in the Kiln, AI & Digital Twin platforms bring an integration of First Principle's / science-based Modelling of the Kiln and historical data based Deep Neural Network Modelling, with high prediction accuracy. On top of this, Reinforcement Learning (RL) agent brings optimization of the process that makes the Pyro process more efficient and results in reduced fuel and power consumption and improved productivity
- Bert Platform Solution -Digital/AI Solution not only transforms the cement manufacturing process making it more digital and autonomous but also brings huge savings in energy usage, 30%+ on power and 20%+ on fuel and increases productivity, 0,5% on raw material & consumables reduction, 3% plant productivity and 25% plant maintenance cost reduction

LTI Mindtree's AIOps solutions reduced turn around time by 25%

About

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Global Footprint

Worldwide

Problem Statement

- Leaver's offboarding for UK based large investment management company
- Employee's offboarding requests were resulting in higher turnaround time
- Multiple application touch points involving various departments and roles

AIOps Tools or Solutions

- CANVAS AIOPs
- PowerShell

Impact and Scale

- 30+ off-boarding requests handled by the BOT every month
- Reduction in turn around time by 25%
- Operation efficiency improved by 45%
- ~90% of manual efforts reduced
- Eliminated serious disruption and financial loss to business

IBM's implementation of AIOps led to 70% improvement in MTTD/MTTR

About

IBM is an American multinational technology corporation headquartered in New York and present in over 175 countries. It specializes in computer hardware, middleware, and software, and provides hosting and consulting services in areas ranging from mainframe computers to nanotechnology. IBM is the largest industrial research organization in the world, with 19 research facilities across a dozen countries.

Global Footprint

Global

Problem Statement

- Client was a latin American Bank with >450,000 employees, provides services in 40+ countries
- Problem: Application service was unavailable customers were not able to access key banking application impacting customer NPS and potentially revenue
- Use case: Storage and compute failure size of thread pool reached maximum due to recent developer update the night before
- Current state: Monitoring tools did not surface issue and root cause was manually determined

AIOps Tools or Solutions

Cloud Pak for Watson AIOps

Impact and Scale

- Identified multi-component correlation with incident logs resulting 7-hour reduction in MTTD
- Improved customer insights with visibility and explainability of alerts and anomalies
- Watson AIOps analyzed performance metric data using time series machine learning. Automatically created a baseline of normal behavior and detected windows of anomalous behavior based
- Watson AI identified anomalies several hours earlier and providing alerts to the IT Operator
- AI Manager, Metric Manager: Automatic baselining metrics and logs resulted in for 7 hours of advance notice/70% improvement in MTTD/MTTR

AIOps implemented by GAVS resulted 90%+ tickets auto-triaged by virtual supervisor

About

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Global Footprint

US, India and Middle East

Problem Statement

The client is a Public Relations (PR) firm, with 6500+ employees, and operating across 6 continents, with a global client base. The firm offers a wide variety of marketing & communication services and research across different industries & sectors.

The client's employees travel frequently across the globe, connecting from disparate locations like airports & field offices, often without access to IP phones to connect with traditional service desks. Being a PR firm, they rely heavily on timely communication and information sharing. With 75% of the total workforce requiring seamless and trouble-free connectivity, their requirements were unique, and different from industry best practices for IT service desk. The existing traditional service desk comprising of 30+ agents, was overwhelmed with 8000-10000 tickets per month, debilitating their productivity, leading to delays in ticket triage & resolution times, and poor user experience.

AIOps Tools or Solutions

GAVS leveraged its AIOps Platform Zero Incident Framework™ (ZIF), to power a new-age service desk with features such as:-

- User self-help portal for quick, anytime anywhere access
- Omni-channel for ease of ticket creation
- Real-time UX monitoring through User Experience Index (UEI)
- Integrated view of ticket queue on a single dashboard
- Heatmaps to highlight problem areas, recurring incident categories
- Workflow automation
- AI-led analytics, predictions, auto-triaging, self-remediation

Impact and Scale

- 40% reduction in tickets – 6000 from 10000+ (2400 automated)
- 50% reduction in ticket triage time
- 90%+ tickets auto-triaged by virtual supervisor
- 30% improvement in response and resolution times
- 96% FCR - an increase of 38%
- 30% productivity improvement through automation
- 4200 hours of manual effort saved in first 11 months
- Service Desk team size reduced from 33 to 24
- 30%+ reduction in IT costs
- 4.52 on 5 User Experience Index (UEI) score
- Perfect CSAT score of 5 on 5; No DSAT

Bert Labs' FMCG client has benefited 30% reduction in electricity through AIOps

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Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

- Keep a track of health of the equipment in an assembly line
- To bring energy efficiency in a manufacturing unit
- To manage the supply chain in a FMCG manufacturing unit

AIOps Tools or Solutions

From an AIOps standpoint primarily, they are solving two problems one is prediction & second is optimization. It is a sensitive, complex process environments. In an unsupervised learning as part of the AIOps, very few companies globally are doing this and Bert Labs is doing it successfully. So as part of unsupervised learning, they work on reinforcement learning (RL). So that is a combination of two very powerful neural networks.

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Impact and Scale

- By deploying AI/IOT powered Bert Platform Solution, Bert Labs' FMCG client has benefited 30% reduction in Electricity & 20% in fuel
- AI and IoT sensors constantly monitor the health of the equipment and alert the engineering team if equipment or unit is having any issues
- One point dashboard makes it easy to give all the information about the manufacturing unit with a touch of a button
- Safety of the people involved
- At the back of this success the Bert Platform Solution is scaling up to complete manufacturing plant and other units

Infosys's AIOps solution resolved 25% of tickets through zero touch

About

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Global Footprint

Global

Problem Statement

Client was a non-profit non-government Indian company that provides shared IT infrastructure and service

Context:

- Application landscape includes 10+ business domains and 50+ Micro Services
- High ticket volume (16K+ /month) - lack of automation impacting TAT and user experience
- Occupied in keeping the lights ON, no time for innovations.
- Lack of leading indicators causing system disruptions — no predictive and proactive AMS

Objectives:

- Massive ticket reduction-The company has committed to 40-45% and are on track to achieve
- Real-time monitoring of KPI for critical business processes
- Minimize disruptions and improve system availability through predictive analytics

AIOps Tools or Solutions

They used Infosys LEAP to achieve:

Zero Touch AMS for ticket reduction

- Identified 40+ SOPs and 17 problem types; Ticket to SOP Mapping as daily activity
- RunDeck for executing resolver Bots, Integration with ITSM for end —end automation
- Business Aligned AMS for Real-time KPI monitoring
- Integrated with Enterprise Applications for real time KPIs
- Integrated with APM, ITSM, ELK for Health of the systems

Reliable AMS for Proactive Monitoring and Self-Healing

- Integrated with ELK, ITSM, APM and Enterprise Applications
- Handled N14K errors / month in Application Logs automatically , incidents created proactively by LEAP as needed.

Impact and Scale

- **25% of tickets** getting resolved through Zero Touch
- **96% Reduction** in ticket > 30 days
- **Lesser disruption** from N14K incidents due to automated handling

AIOps implementation by IBM led to reduction of MTTR by 43%

About

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Global Footprint

Global

Problem Statement

- Client was UK fashion retailer with strong online presence
- Problem : Service Outage: Customers could not place order on Black Friday resulting in poor customer experience and significant lost revenue
- Use case: Storage and Compute failure - Black Friday pushed existing infrastructure storage and compute beyond limits to failure
- Current state: Current incident management stack did not identify anomalies ahead of outage

AIOps Tools or Solutions

Cloud Pak for Watson AIOps

Impact and Scale

- Event Manager noise reduction: AI event grouping using logs and contextualized by topology reduced noise and root cause identification in real time reducing MTTR by 43%
- Incident detection revealed the point of issue from host logs contextualized by topology
- Improved MTTR by 43% or 40 min per incident
- Watson AIOps to grouped events and reduced anomaly detection time. This allowed the SRE to see root cause in real time
- Showed affected components and blast radius to identify root cause in real time

Bert Labs' FMCG client has benefited 20% reduction in fuel through AIOps

About

Bert Labs was incorporated in 2017, to help the clients in their Digital Transformation be it a work environment, factory setting, or manufacturing unit, for consumers, businesses, and governments.
Bert Labs is innovation at the inter-section of Artificial Intelligence -Internet of Things (AI-IoT), solving complex industrial problems, energy efficiency improvement and production efficiency improvement for large corporations across industry verticals, to help them achieve their year-on-year Sustainability, Productivity, and Capital Efficiency goals. Bert Labs helps customers leverage their software and hardware to generate customized applications, delivered within the nerve center of where they are located.

Global Footprint

India, Middle East, APAC, North America and Europe

Problem Statement

- To reduce the energy dependability in chemical industry & Textile as it is one of the most energy-intensive manufacturing industries
- To work towards ESG goals in a Chemical industry as it is major source of greenhouse gas (GHG) emissions
- To ensure safety in chemical production as it often involves hazardous materials and high-pressure/high-temperature conditions, and reduce fire, explosion, and other types of chemical accidents

AIOps Tools or Solutions

From an AIOps standpoint primarily, they are solving two problems one is prediction & second is optimization. It is a sensitive, complex process environments. In an unsupervised learning as part of the AIOps, very few companies globally are doing this and Bert Labs is doing it successfully. So as part of unsupervised learning, they work on reinforcement learning (RL). So that is a combination of two very powerful neural networks.

Rest APIs integrated with Bert Nova Microservices, for continues flow of data aggregation, data preprocessing on live streaming. All other tools/solutions are built and created in house for the requirements.

Impact and Scale

- Bert Platform Solution AI-IoT solution brings in much needed safety and assurance to Soda Ash, Caustic Soda, Textiles, Specialty Chemical manufacturing units and helps in avoiding accidents as AI-IoT solutions can provide remote access to the complete functioning of the facility
- By deploying AI/IOT powered Bert Platform Solution, the client has benefited 30% reduction in Electricity & 20% in fuel
- At the back of this success the Bert Platform Solution is scaled to complete Textile and chemical manufacturing plant and their other plants

Cisco automates and simplifies IT services client Ops with AIOps solution

About

Cisco is a US technology company that is best known for its networking products.

Headquartered in California – its name is short for San Francisco – it develops, manufactures and sells networking hardware, telecoms equipment and other IT services and products.

The company was founded in 1984.

Global Footprint

Global

Problem Statement

A US based IT Services client had the following challenges:

- Align infrastructure across multiple data centers
- Boost operational efficiency and speed
- Increase data center automation and insights

AIOps Tools or Solutions

- Cisco Nexus® 9000 Series switches
- Cisco® Data Center Network Manager (DCNM)
- Cisco Nexus Dashboard
- Cisco Nexus Insights
- Cisco Network Assurance Engine (NAE)
- Cisco UCS® servers
- Cisco Intersight™ Infrastructure Service

Impact and Scale

Client is using Cisco DCNM to centrally manage its facility-spanning infrastructure resources.
A comprehensive management platform, Cisco DCNM provides fabric-oriented configuration, automation, and control for NX-OS network deployments. Other impact made by solution:

- Established multi-site connectivity and orchestration
- Accelerated data center deployments and troubleshooting
- Improved infrastructure management, visibility and assurance

Cisco IT advances proactive, predictive operations with its AIOps solution Cisco Nexus dashboard

About

Cisco is a US technology company that is best known for its networking products.

Headquartered in California – its name is short for San Francisco – it develops, manufactures and sells networking hardware, telecoms equipment and other IT services and products.

The company was founded in 1984.

Global Footprint

Global

Problem Statement

Cisco IT had the following needs:

- To improve data center network visibility and service assurance
- To accelerate anomaly detection, troubleshooting, and remediation
- To consolidate IT toolsets and footprint
- To reduce IT operations costs

AIOps Tools or Solutions

- Cisco Nexus® Dashboard
- Cisco Nexus® Dashboard Insights (formerly Nexus Insights)
- Cisco® Application Centric Infrastructure (Cisco ACI™)

Impact and Scale

- Unified operations toolset and correlated infrastructure insights
- Cut the time spent going back-and-forth between monitoring tools by 50 percent
- Reduced correlation efforts by 40 to 50 percent
- Accelerated mean time to detect (MTTD) by 30 percent

#10
Appendix

Sources & Reports

Sources

- Optimise your IT operations with AIOps
- AIOps Building Blocks
- The History of AIOps
- Seven benefits of AIOps to transform your business operations
- What is AIOps?/ What is AIOps?
- The Essential Guide to AIOps
- MLOPS VS. AIOPS: IMPORTANT DIFFERENCES YOU NEED TO KNOW
- https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/crosswork-network-automation/solution-overview-c22-2403404.html
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Methodology

This AIOps report has been developed by nasscom insights team through a comprehensive study to understand the landscape.

The nasscom insights team relied heavily on both primary and secondary research, internal and external research reports, and stakeholders across the board — industry, academia, end-user enterprise, etc. — for their inputs that have added value to the report.

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About

nasscom is the industry association for the technology sector in India. A not-for-profit organization funded by the industry, its objective is to build a growth-led and sustainable technology and business services sector in the country with over 3,000 members. nasscom Insights is the in-house research and analytics arm of nasscom, generating insights and driving thought leadership for today's business leaders and entrepreneurs to strengthen India's position as a hub for digital technologies and innovation.

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