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# Adopting **AI-powered** IT Service Management





## INTRODUCTION

IT operations face a plethora of challenges, from a shortage of skilled experts to rapid technological changes, inconsistent processes, a lack of visibility across environments, difficulty meeting deadlines and achieving the KPIs (Key Performance Indicators), data security compliance, and rising IT expenses. If the present economic conditions and expert predictions are any indication, then some of these challenges will likely intensify. There is no silver bullet to tackle all these challenges at once, but you can reduce IT expenses by introducing AI-powered IT service management. There are several areas where AI can help cut costs.

In this whitepaper, we will limit our focus to the role of AI in three areas.

01

Implementing automation

02

Transforming IT data into  
actionable insights

03

Keeping tabs on changes

## IMPLEMENTING AUTOMATION

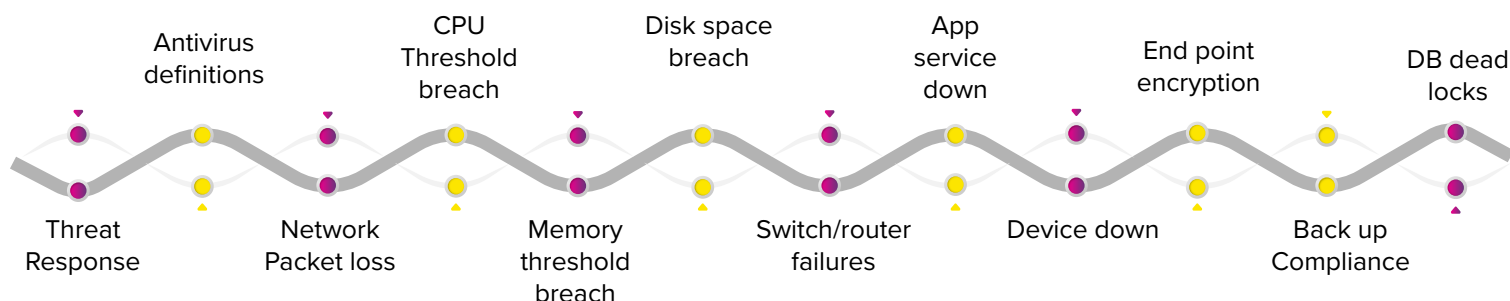


AI-powered automation can be used to automate tasks like customer support, fraud detection, and language translation. However, there is a growing apprehension that automation will take away human jobs, making senior leadership reluctant to completely adopt automation. The truth is automation is most effective when used to complement and add to human potential, not replace it.

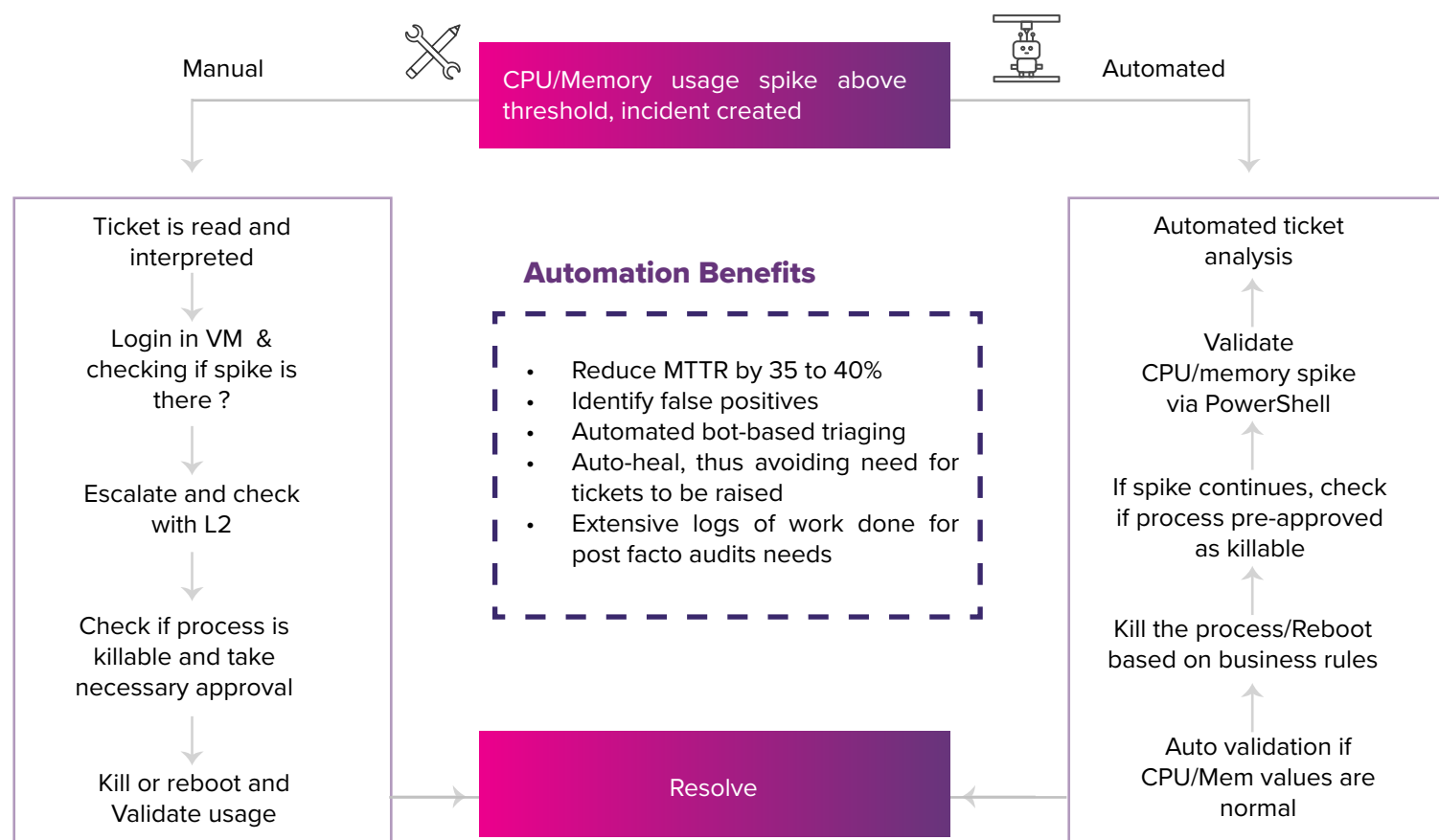
In the case of IT, automation can be used to reduce low-level service tickets that accept a sizable portion of the IT budget. Instead of spending time dealing with mundane tickets like password resets and pre-authorized account access provisioning, technicians can focus on complex troubleshooting and problem analysis, making automation an ally that enhances human productivity and impact. For end users, automation helps provide better digital experiences. For IT, automation can help get more work done at lower costs.

Below are some use cases of how automation can help cut the costs:

## Top Incidents use case:



## Automated L1 Incidents



# TRANSFORMING IT DATA INTO ACTIONABLE INSIGHTS

While it is obvious that CPU or MEM breach tickets can be automated, it is difficult to figure out other tickets that can be automated.

## Here is how to do it.

Filter out all L1 incident tickets managed by a team in the last year

Look at the average time spent by a technician per ticket

Investigate rule books to assess workflows

One of the simplest ways to tame increasing services and operational costs is to use data to uncover problems and resolve them. However, the IT systems and the applications used to monitor them are buried within tight silos, so generating any coherent historic information out of these silos is next to impossible.

The use of AI provides insights close to the people who need them by aggregating IT as well as enterprise data in a single console. The AI-enabled solutions use the power of ML and NLP to understand the user queries and convert the long-winded tables and databases into rich visualizations that provide a holistic picture of IT performance.

Below are three use cases where AI-enabled analytics can help save IT costs.

## Trend analysis for expense tracking

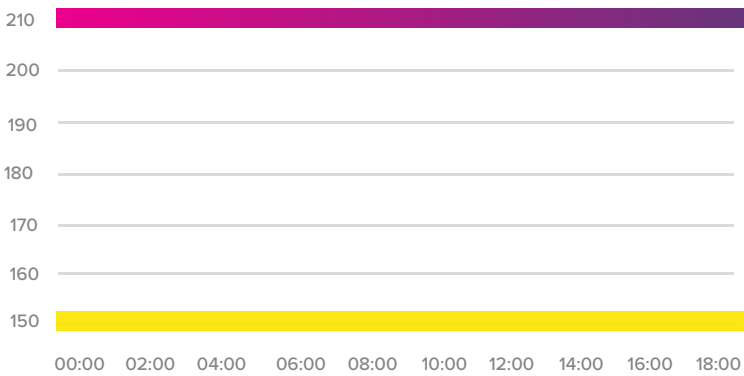
Comparing current spending against historical data helps in establishing boundaries with minimum and maximum values. This also helps you in tracking the deviations, improvements, or declines in your operating standards.

Take, for example, cloud server expenses. Many components can run up cloud costs, including servers, network traffic, database queries, and cloud storage services. Trend analysis can help you keep the cloud expenses in check and pinpoint whenever the expenses surge past daily, weekly, or biweekly spending standards.

Here is a report that shows the daily cloud expenses for the past year, revealing sudden and recurring surges in spending.



TOTAL EXPENDITURE AND FORECAST

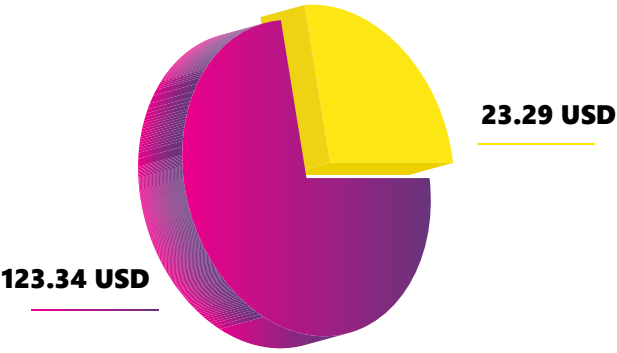


Month-to-Date Expenditure  
Current Month Forecast

Month-to-Date Expenditure  
152.63 USD

Current Month Forecast  
210.49 USD

SERVICES AND TAX

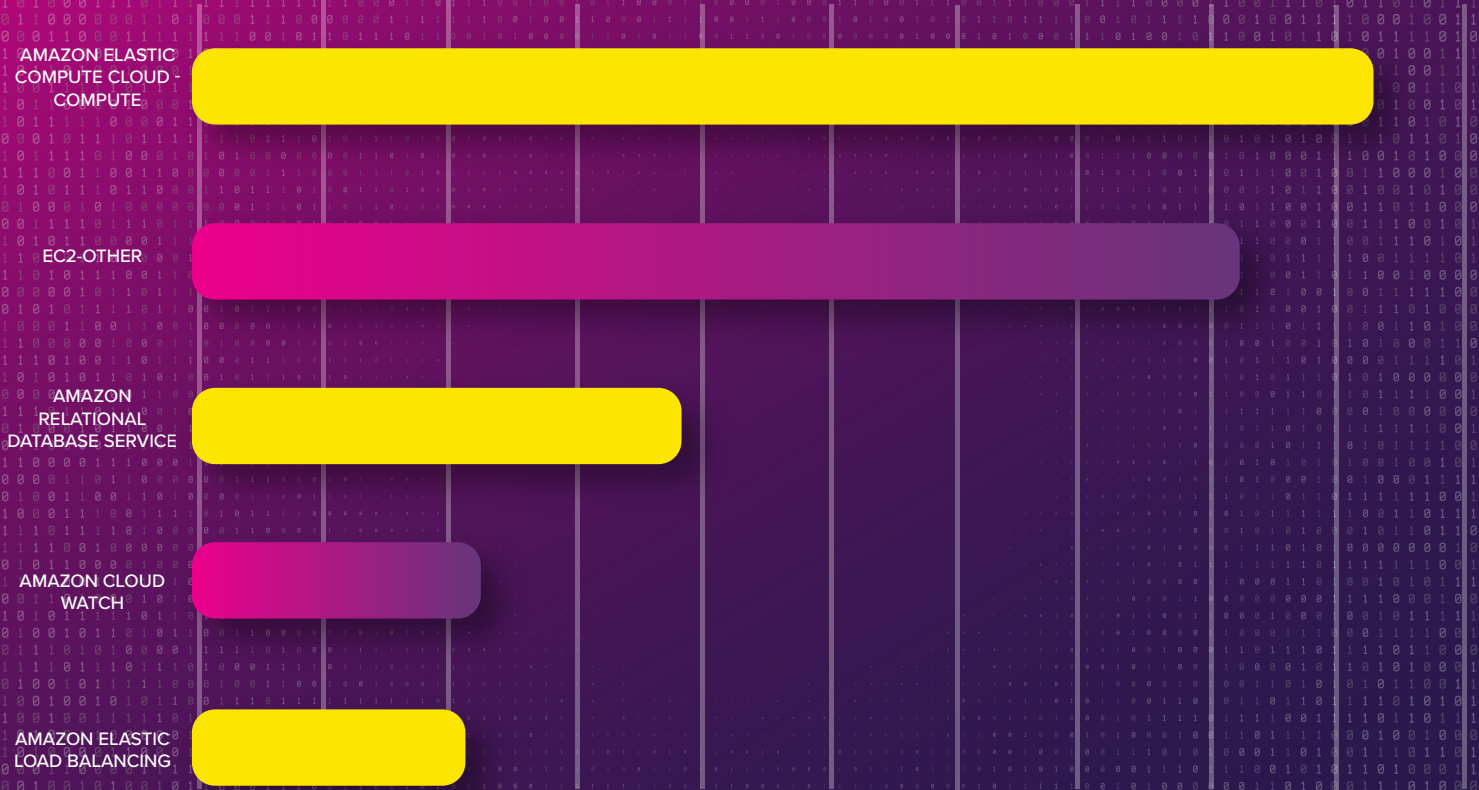


Month-to-Date Services Cost  
Month-to-Date Tax

Month-to-Date Services Cost  
129.34 USD

Month-to-Date Tax  
23.29 USD

MONTH-TO-DATE TOP SERVICES BY SPEND



Month-to-Date Spend by Service

<input type="checkbox"/>	AWS Service	Cost(USD)	Health
<input type="checkbox"/>	Amazon Elastic Compute Cloud - Compute	46.86	<div><div></div></div>
<input type="checkbox"/>	EC2 - Other	41.39	<div><div></div></div>
<input type="checkbox"/>	Amazon Relational Database Service	19.79	<div><div></div></div>
<input type="checkbox"/>	AmazonCloudWatch	10.76	<div><div></div></div>
<input type="checkbox"/>	Amazon Elastic Load Balancing	10.32	<div><div></div></div>
<input type="checkbox"/>	AWS Cost Explorer	0.22	<div><div></div></div>
<input type="checkbox"/>	Amazon Simple Storage Service	0	<div><div></div></div>
<input type="checkbox"/>	Amazon Simple Notification Service	0	<div><div></div></div>
<input type="checkbox"/>	Amazon DynamoDB	0	<div><div></div></div>
<input type="checkbox"/>	AWS Key Management Service	0	<div><div></div></div>
<input type="checkbox"/>	Amazon SimpleDB	0	<div><div></div></div>



Drilling down further into the issue revealed that a test that was supposed to run a few VMs ended up running over one hundred machines instead. This rocketed up the cloud server costs by a few thousand.

Such spikes and glitches are common in IT and can take weeks or even months to find if you are relying on humans to create dashboards and manually track the trends. There are also issues related to data volume, silos, and accuracy.

AI-based analytics helps combat these challenges. AI can ingest large volumes of data to learn the standard behavioral patterns to better distinguish normal and unusual behavior in just a few seconds instead of hours or days. AI algorithms can also send out real-time alerts to notify the DRI's, so that they can remediate issues quickly.

**Note: AI-enabled trend analysis can be applied to other areas of IT management, such as performance tracking, usage tracking, and issue history tracking, for holistic cost management.**

## Predictive analysis for foreseeing database performance issues

Proactively predicting when infrastructure or IT equipment is likely to go down helps you save the IT costs in three ways.

01



Prevents the downtime and the ensuing chaos that results in lost business hours and productivity.

02



Helps you plan preventive maintenance, which is far less expensive than emergency repair.

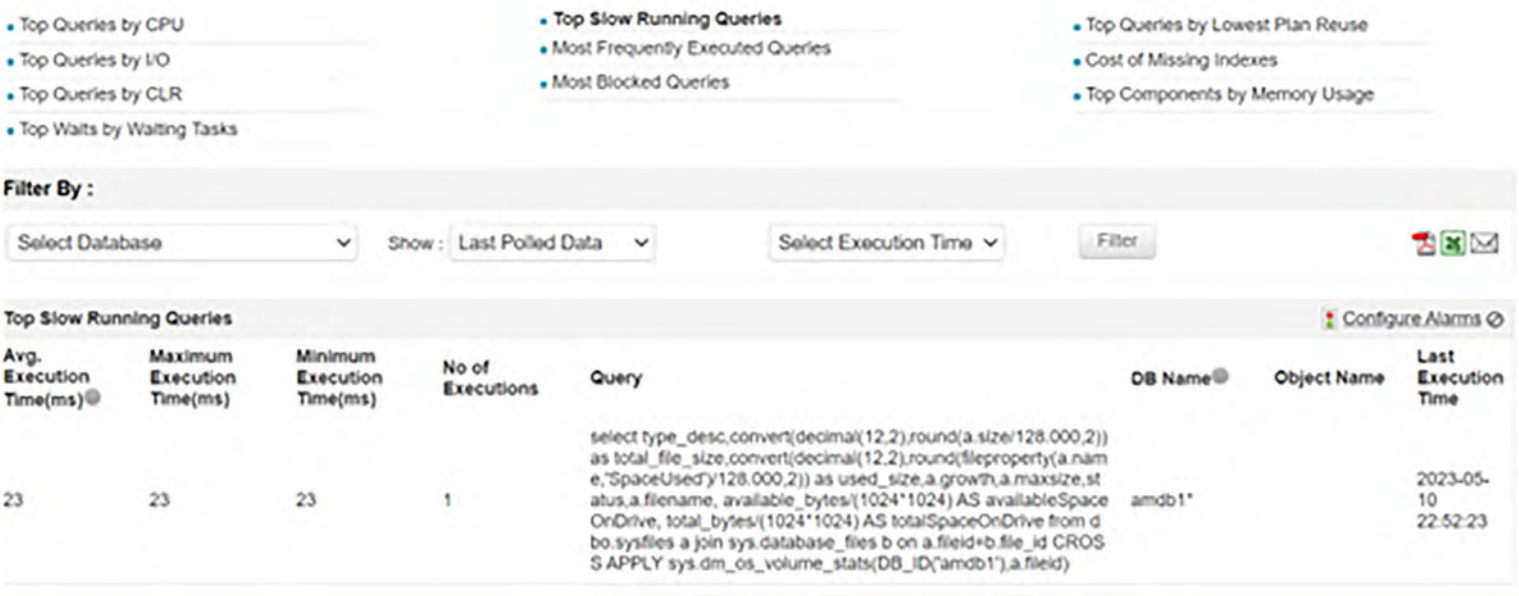
03



Reduces the frequency of unplanned maintenance.



Slow queries (queries involving improper parsing or multiple aggregate functions) are the primary reason for database performance issues. Keeping track of the number of running slow queries alerts you about database performance issues. A quick analysis of your log entries will reveal the number of running slow queries. The report below shows the hourly trend of currently active slow queries and the forecast for the near future. When the number of slow queries surges beyond the threshold (the red line), performance issues result.

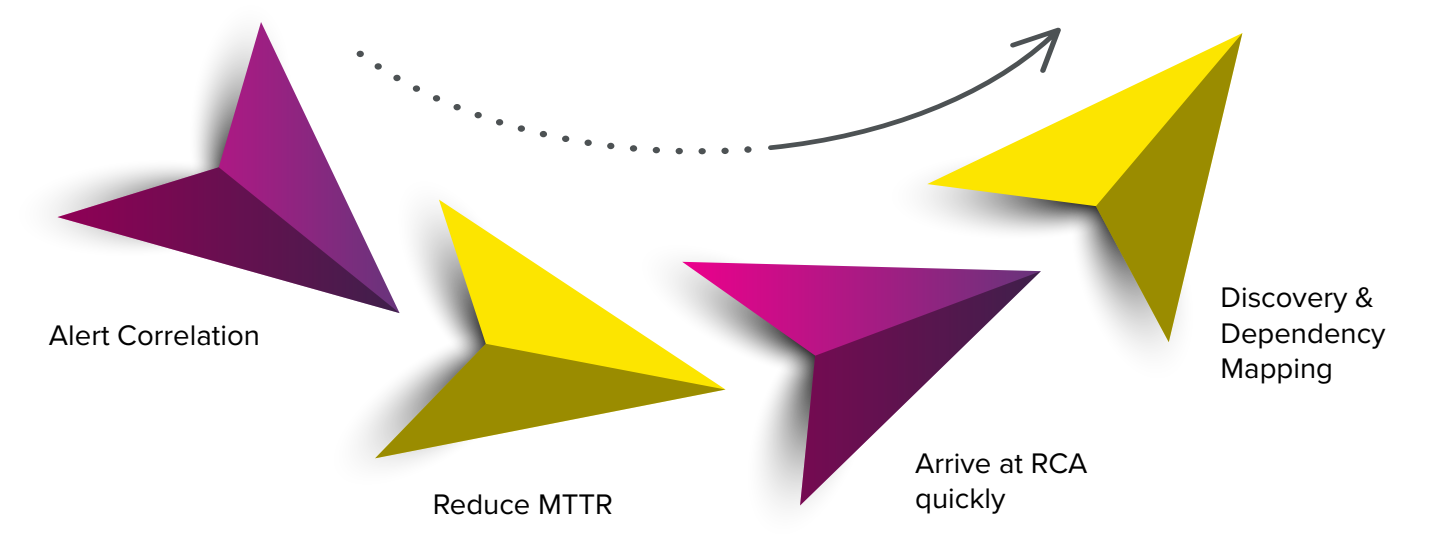


## Root Cause Analysis for troubleshooting problems

Root cause analysis helps you effectively remediate problems and ensure they do not reoccur or trigger a chain of related issues. As side effects, a root cause analysis helps you eliminate the duplication of IT efforts, reduce IT workload, and save on IT service costs.

Root cause analysis can be performed manually, but this takes an extensive amount of time and effort. By the time the underlying cause is discovered, the problem will have festered into a showstopping issue.

Built-in AI assistants can cut through data and isolate symptoms from the root cause, facilitating quick and effective remediation of the problem.



## Key Challenges

01

Problem Isolation  
– Root Cause  
Analysis

02

Pull together  
relevant teams  
and data

03

Hard to access,  
verify diverse  
ops data



## KEEPING TABS ON CHANGES

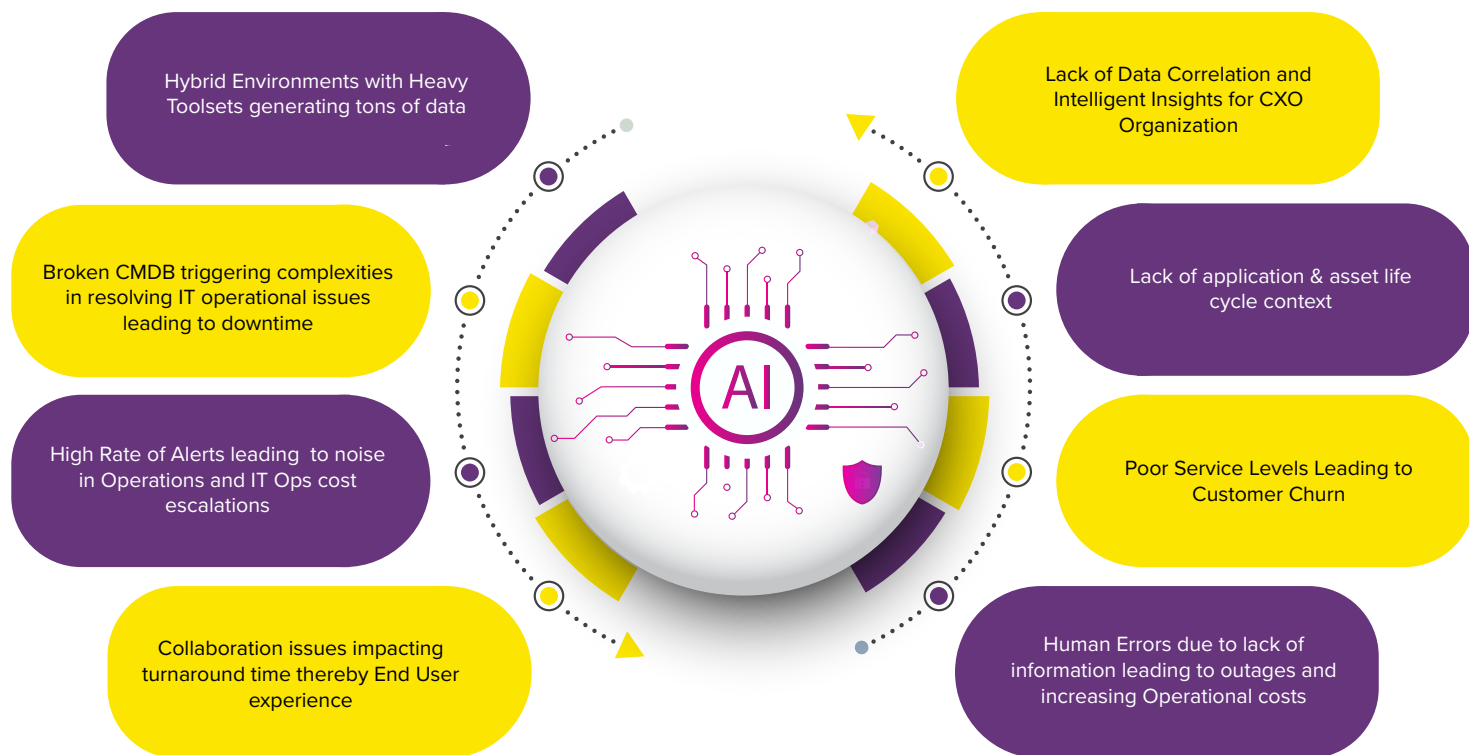
Catching critical changes in data, such as spikes in cloud expenditures, deterioration of assets, or decline in timely adherence to policies, is important, following you to apply stopgap measures and prevent losses.

While IT monitoring and management applications can send out threshold-based alerts, they lack context and environmental awareness. For instance, application monitoring apps can alert you when apps are unavailable. Network monitoring apps can alert you when networks are sluggish. But these apps cannot combine the two pieces of information to provide a unified alert that says one of your network components is down; as a result, several applications are unavailable.

The ability to decode these symptom alarms and narrow them down to the root cause of problems can save a lot of money for an organization and put them light-years ahead when it comes to detecting threats and identifying opportunities.



## Key Challenges and Benefits Delivered Using AI



**>70%**

**Significant reduction in alerts:** Auto correlate different sources of alerts to bring down the alert noise. Customer Satisfaction is improved by ~60%

**>50%**

**Reduction in MTTR/MTTD:** Using the virtual incident room capability pinpoints the root cause incidents

**~35%**

**Incidents are auto diagnosed:** AI/ML recommendations present similar incidents to serve as a knowledge base

**>80%**

**Improvement in service uptime:** Self-learning system provides recommendations on next steps and SME allocation

**Cost Savings & Enhanced Security :** Optimized Utilization and Cloud Spend

**Enhancement of business visibility:** Unified Visibility across infrastructure & apps resulting in better user experience, provides CxO and the IT admins a dashboard for business service level visibility

## AI Ops

Improve time to recover with AI Based Alert Classification

+

Intelligent Co-relation of Alerts

+

Context Understanding

=

1. Avoid ticket re-shuttling
2. Increase Availability

## Ops Automation

MTTR reduced from 80+ mins to <10 mins per incident \*\*

+

Incidents handled & resolved via Automation

+

Faster resolution post automated scenario

=

Faster recovery of Infra from an Incident

## Patching

MTTR reduced from 75 mins to 30 mins per deployment \*\*

+

Vulnerability deployment handled via Automation

+

Minimize threat impact

=

Reduce effort to deploy vulnerabilities

\*\* MTTR is generic based on our experience and not specific to any organization

## CONCLUSION:

You might have noticed something that the examples above have in common. Each process is a simple pain point that can be addressed to multiply the cost savings and cut down on IT expenses. Because these pain points can be eliminated through AI, your organization can save a significant amount of time in implementing these ideas. This way, not only can you create a bottom-line impact, but you can also improve employee productivity, technician morale, and the MTTR. This also lets technicians take on more important challenges.

## AUTHOR BIO:



### Sujith MR – Technical Manager

Sujith has 15 years of experience in ITOM and ITSM, providing expert advice and direction to clients to achieve maximum benefits with minimal effort. He has a track record of completing projects and creating corporate growth. Sujith has hands-on industry innovations, and his ideas offer a thorough awareness of developing technology & best practices for each engagement.





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