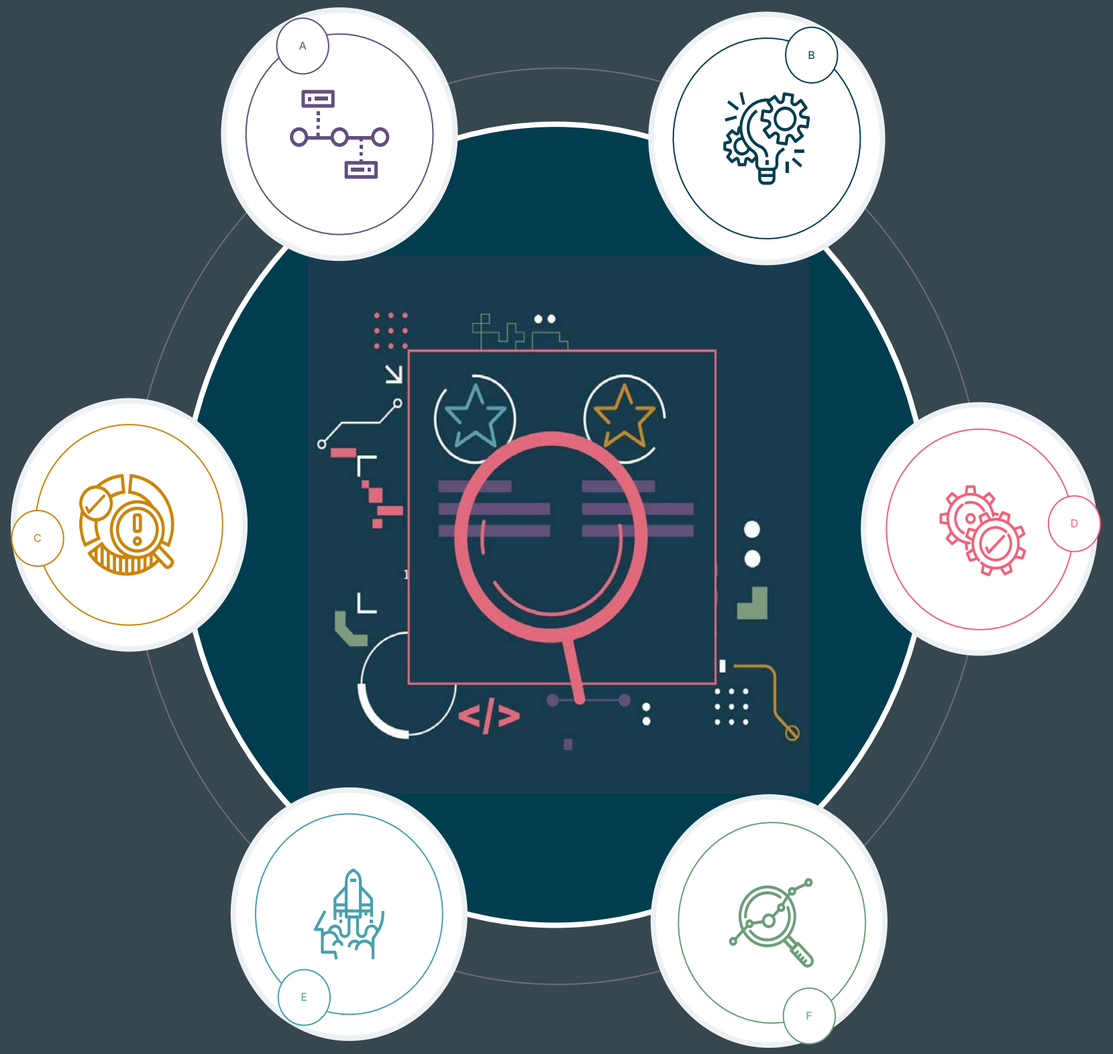
# Navigating the digital landscape with intelligent full stack observability

Manik Kashikar | 05-Jun-2025



# The cost of poor Observability

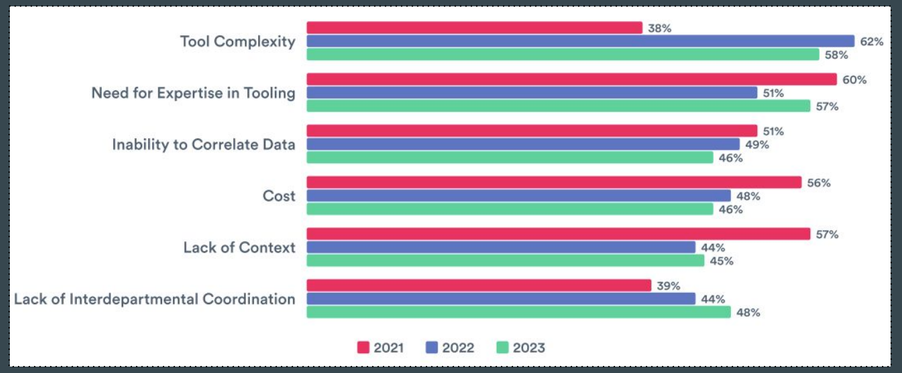
State of Observability 2023

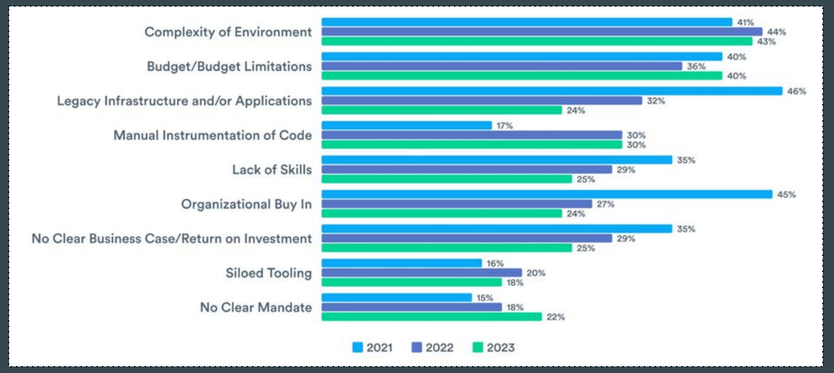
89% of organizations say more than half of their environment is observable. However only 11% feel they have complete visibility.

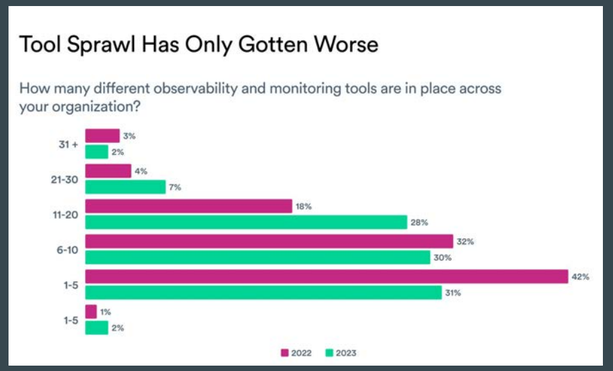
64% of organizations are spending a day or longer on typical investigations (high MTTR)

51%of organizations are expecting data to grow by 75% or more in the coming year (adding more complexity)

67% of orgs have 6 or more observability and monitoring tools in their environment (increased cost & data correlation challenges)



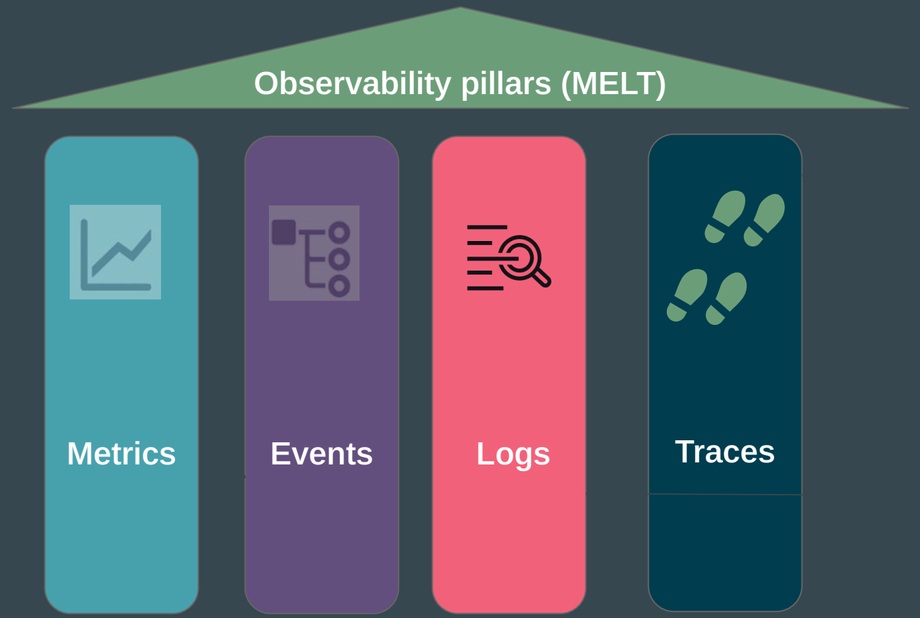




**Which of the above challenges has your organization faced when it comes to Observability???**

# Treat Observability as First-class citizen

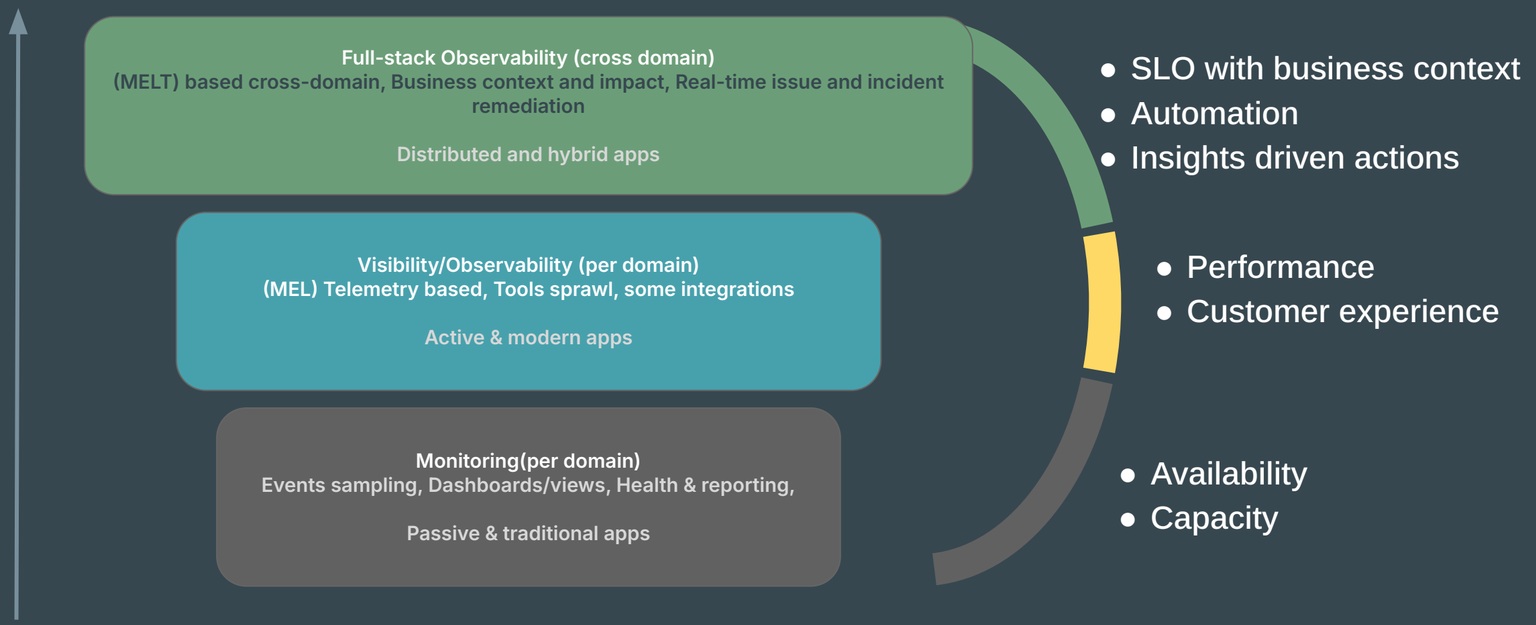
“ Observability understand what is happening in a system,

achieve operational excellence and meet business objectives, ”

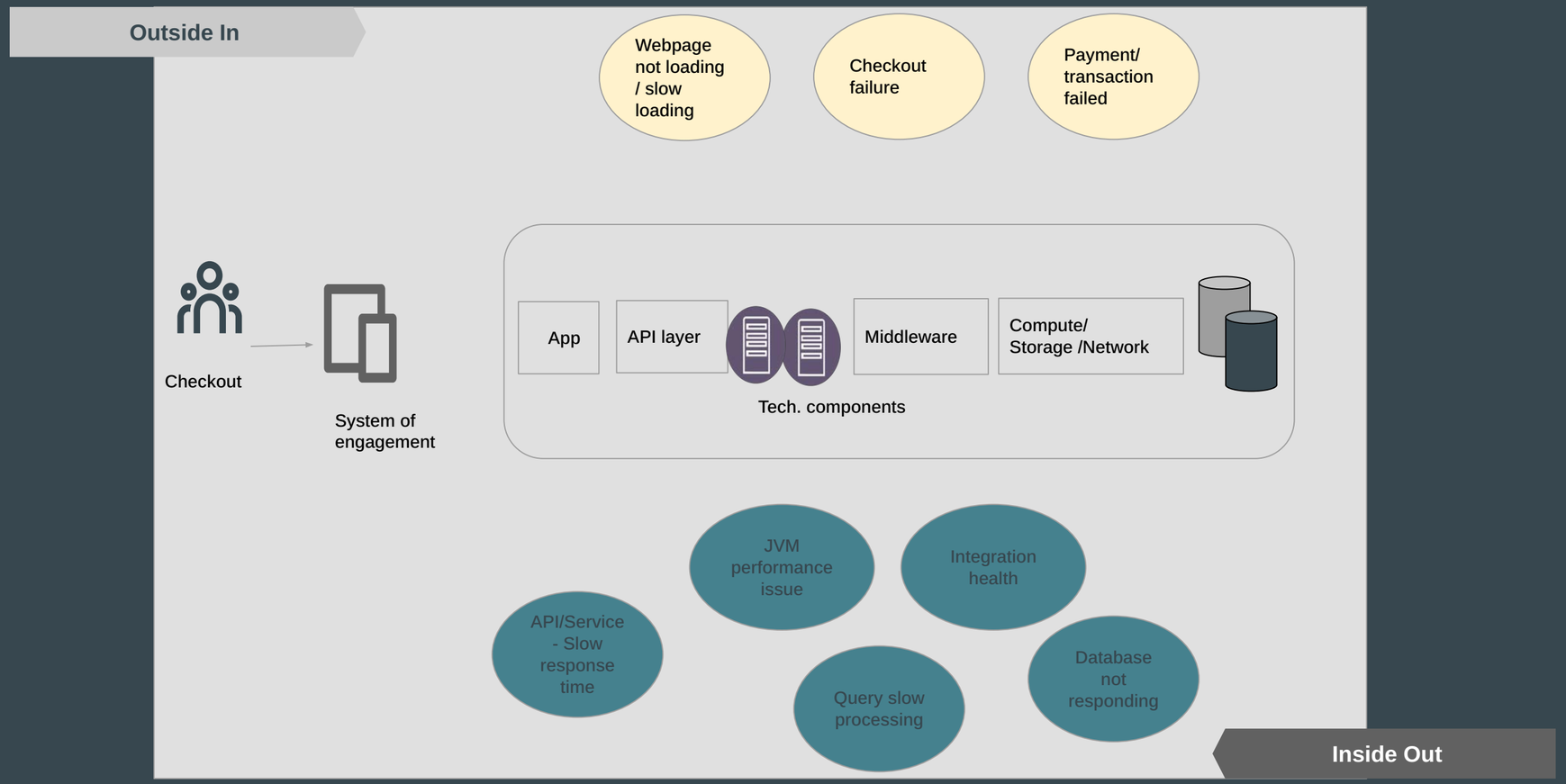



# Full-stack Observability

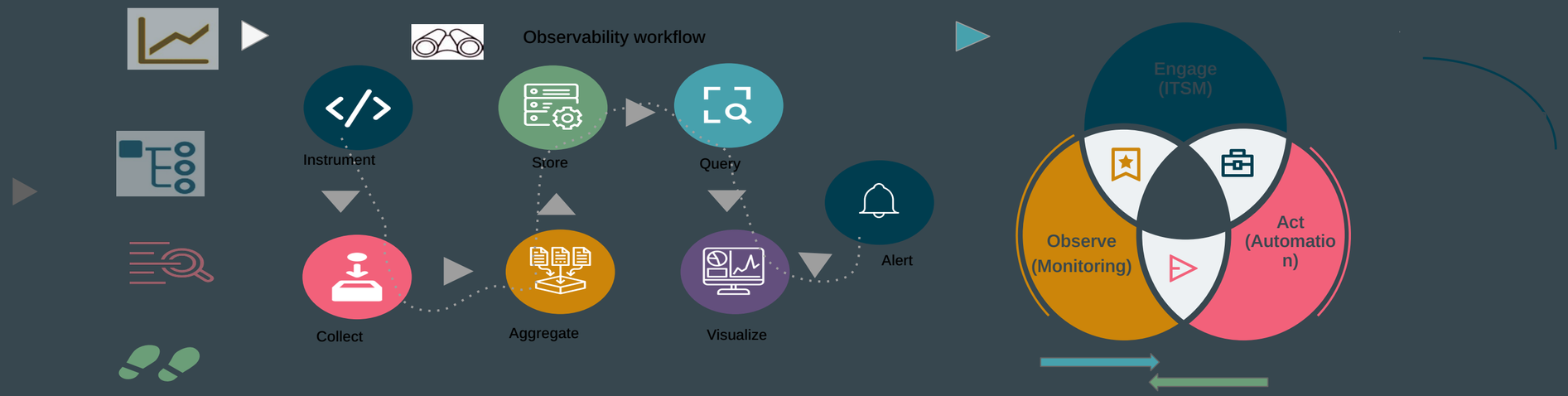
Full Lifecycle Observability is about two things: fixing problems and getting ahead of them. By embedding observability earlier in the software lifecycle, engineers can plan for and fix performance problems that they ordinarily wouldn’t recognise until code is running in production



# Achieving  fullstack observability



# Journey towards AIOps Observability




**On-premise | Hybrid cloud | Mono cloud | Multi-cloud**

## Identify problems & Set goals

Understand the problems that we need to solve to identify the capabilities we will need from an AIOps solution.

## Assess current environment

Gather relevant information about teams, processes, tools, and data involved in maintaining software reliability and managing incidents to surface which teams and systems within your organization could benefit the most from AIOps.

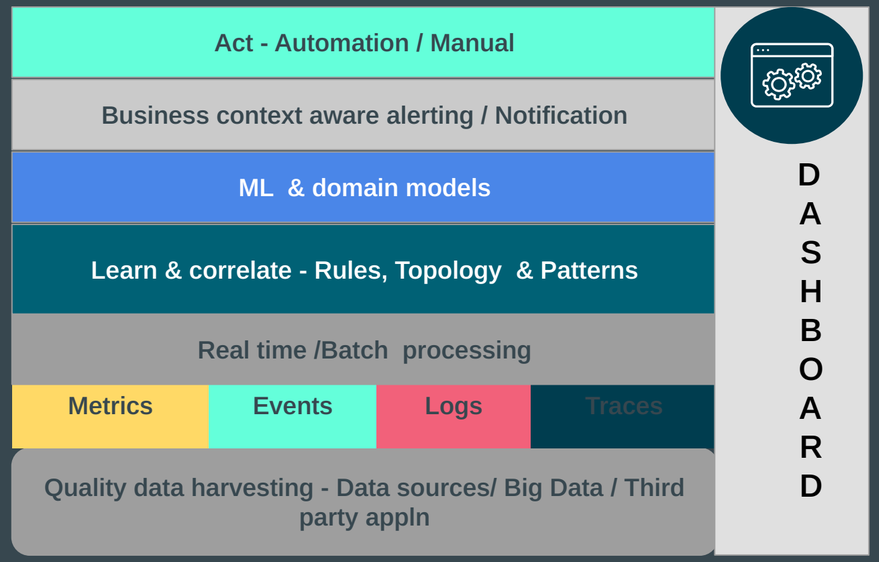
## Define success criteria

Reduce MTTR,number of incidents per month, Number of alert events per month,Number of notifications received per month(this can be fewer than alerts),Ops time spent on incident management

## Define where to start

- configure notifications for anomaly detection
- expand to additional teams suffering from the same problems
- Set up advanced AIOps workflows

# Components of AIops  & its focus area..




## AIOps capabilities

Intelligent Alerting

Incident volume reduction through correlating events. complex event handling

Cross-domain change tracking & Correlation

Identify changes causing incidents/outages

Automated remediation

Resolution of common issues and incidents based on AI-driven insights.

Proactive performance monitoring in real-time

Identify problematic areas  causing incidents/outages

Anomaly detection

Identify unusual patterns and anomalies in infrastructure and application behavior.

Coherent Analysis
Analyzing vast data sets and identifying outliers is complex in modern, distributed architectures with numerous instances

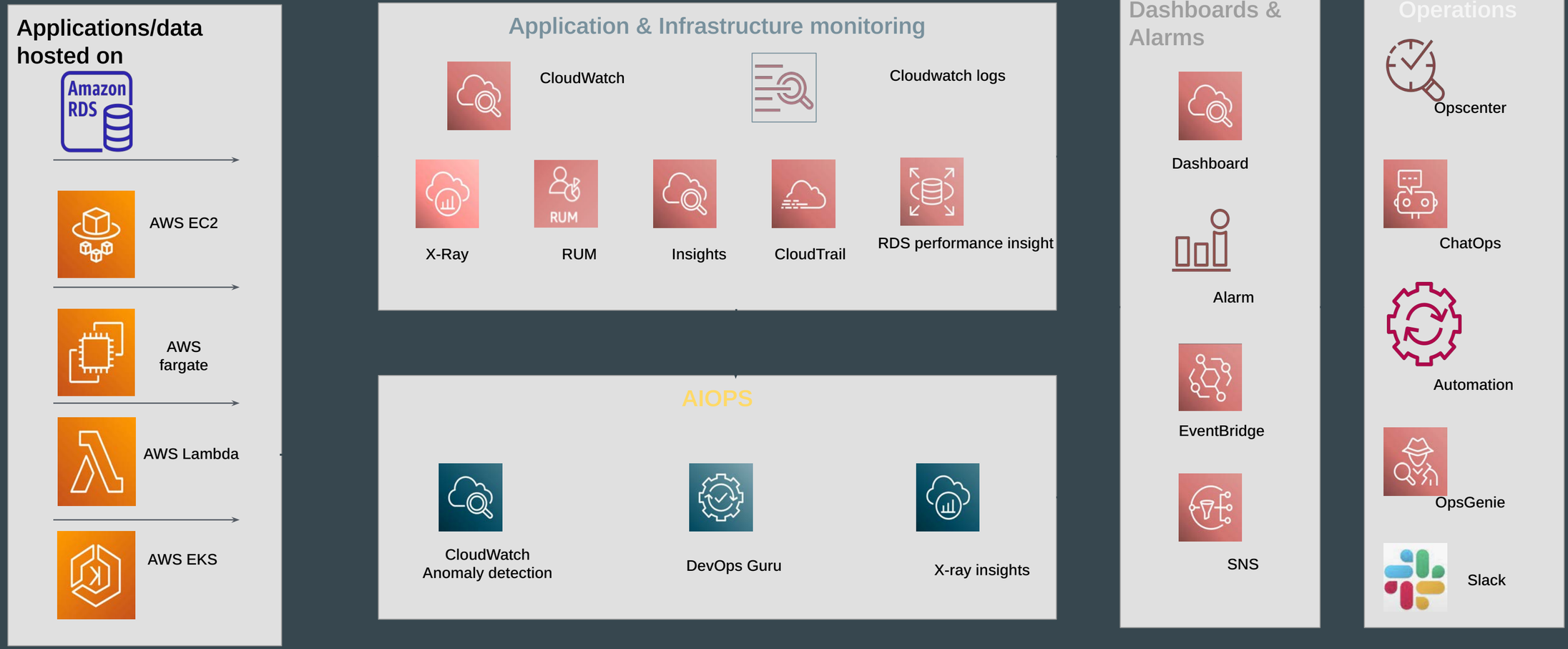
Data driven decision making

Make informed and data-driven decisions for IT operations.

Gaps in auto-ticketing

Show opportunities for auto-ticketing

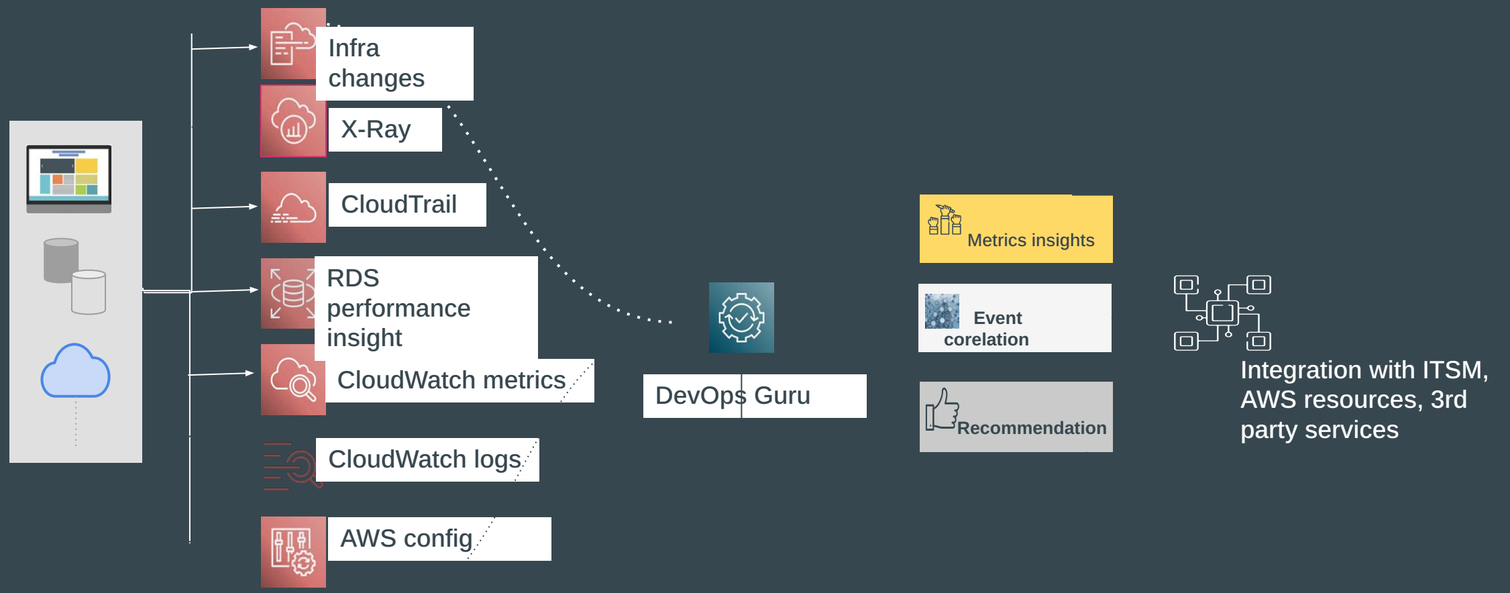
# Observability with AIOps on AWS



# AWS AIOps services  (1 / 2)

Amazon Devops Guru is a fully managed  machine learning service designed to detect abnormal operating patterns so you can identify issues before they impact your customers.

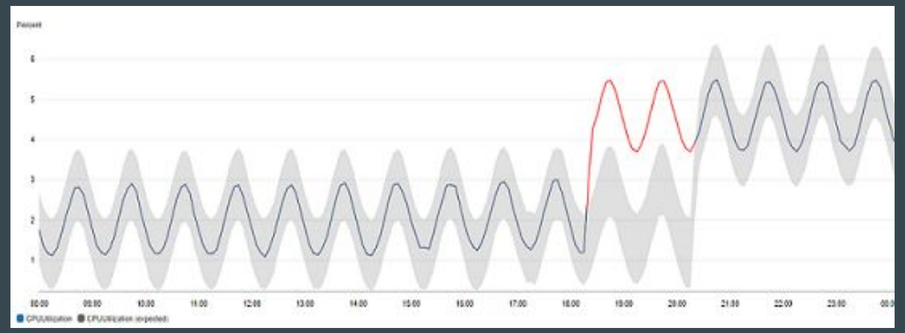
- It is easy-to-use as no prior ML experience required
- It auto detects operational issues
- Provides quick resolution
- Easy to scale and maintain availability as new AWS workloads are added.
- It helps to reduce noise (overcome alarm fatigue)



# AWS - AIOps services (2/2)

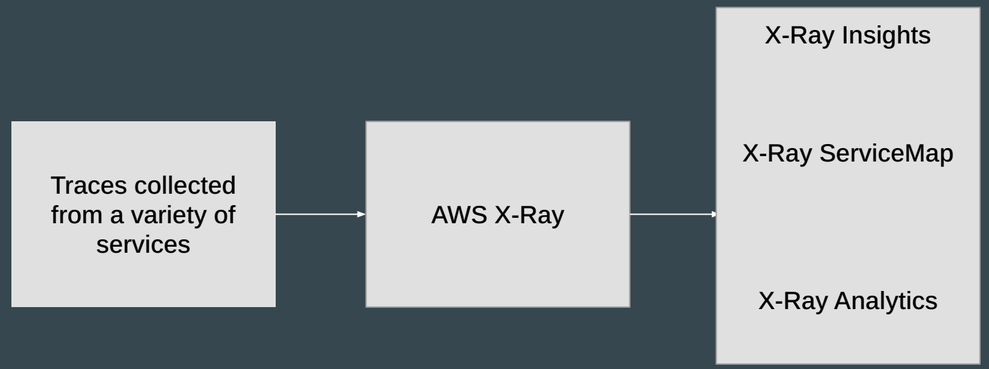
**Cloudwatch Anomaly detection** allows you to apply ML algorithms to continuously analyze system and application metrics, determine a normal baselines, and surface anomalies with minimal user intervention.

- It creates alarms that automatically adjust thresholds based on natural metric patterns.
- It raises alarm when the metric value is above or below the threshold/range
- Visualize metrics with anomaly detection bands on dashboards

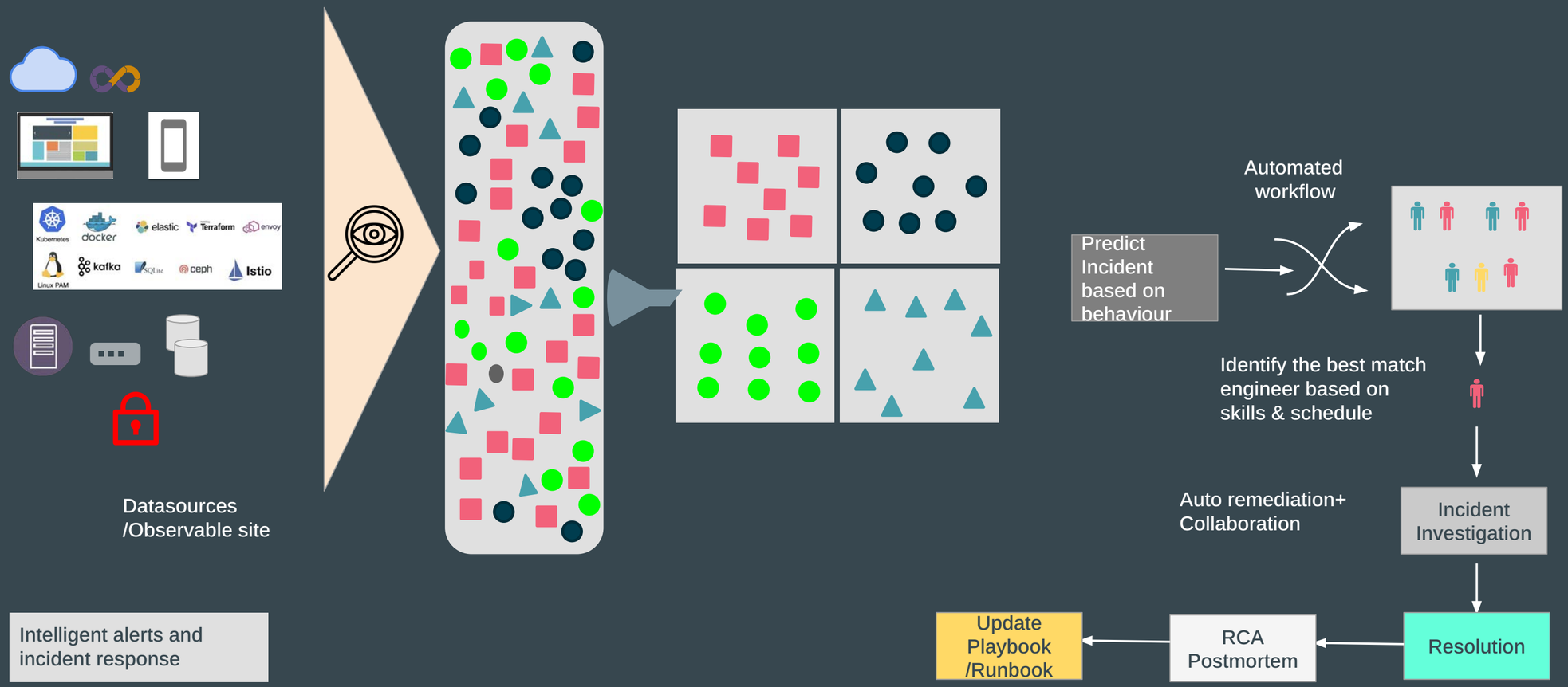


**AWS X-Ray Insights**

- It collects traces from applications.
- Identify anomalous services and automatically identify potential root cause.
- Provide actionable insights based on anomaly detection.



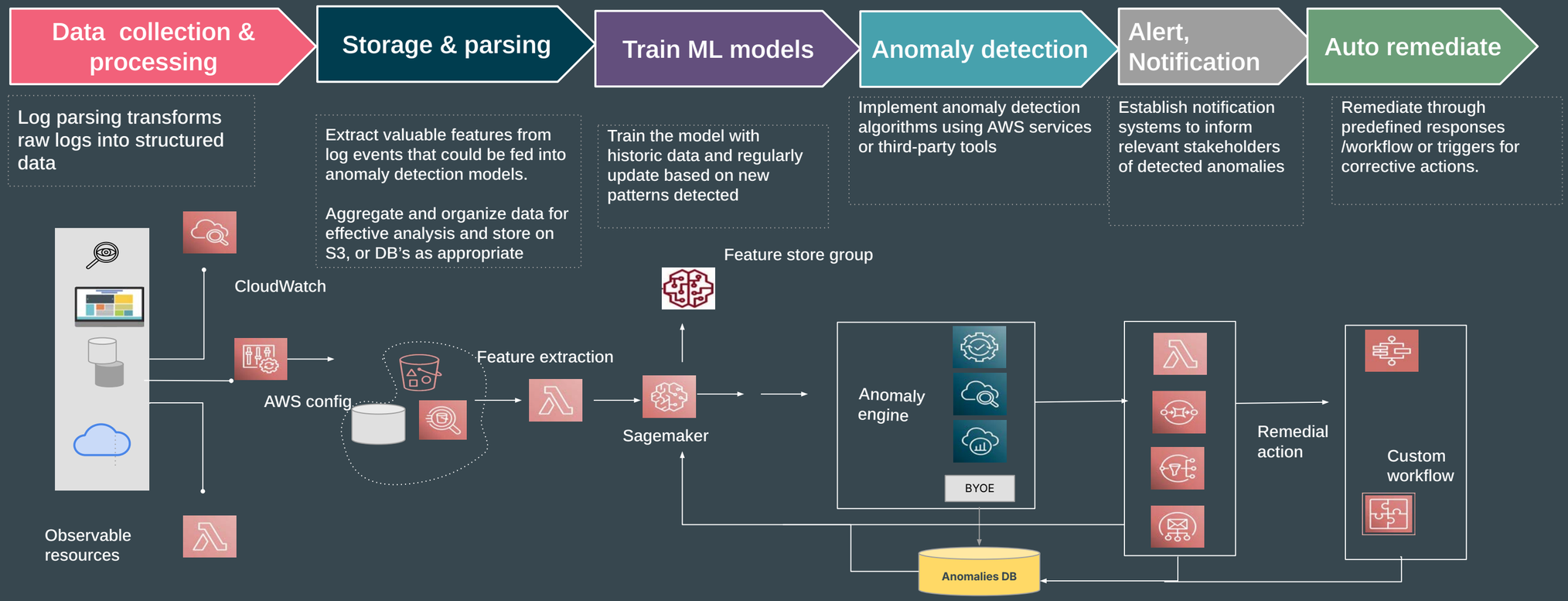
# Optimizing IT operations through automation



# Reduce Incident volumes with AIOps

# Anomaly detection with AIOPS

It involves leveraging Artificial Intelligence for IT Operations to identify and respond to unusual patterns or events within the AWS environment. This proactive approach enhances observability, allowing for early detection of anomalies that may indicate potential issues or threats, ultimately contributing to improved system performance and reliability.



# AIOps :Challenges & Benefits

Common Challenges of AIOps are:

- Complex Implementation: Integrating AIOps into existing IT infrastructure can be complex and requires careful planning.
- Data Quality: AIOps heavily relies on data quality, and issues with data accuracy or completeness can impact results.
- Setting up good, continuous data flows : Data is the heart of AIOps. AI algorithms need access to a large amount of historical data.Implementing comprehensive AI involves the constant collection, cleaning, transformation, labeling, storage, and analysis of extensive data.  IT teams sometimes fail in scaling AI projects beyond test beds
- Skill Gap: Implementing AIOps requires skilled professionals who understand both IT operations and data science, creating a potential skills gap.
- Change Management: Resistance to change and the need for cultural transformation within IT teams can be a challenge.
- Costs: Initial setup costs and ongoing expenses for AIOps tools and technologies can be a consideration.

- AIOPs helps to examine historical data and usage trends, empowering organizations to garner profound insights into their infrastructure.
- It helps to monitor ongoing data and usage, compare it with historical patterns, and identify instances of potential bottlenecks, component failures, or other issues.
- It helps to anticipate future trends for optimizing resource allocation and strategize for forthcoming expansion, such as capacity planning and change impact analysis.
- A notable advantage of AI lies in its ability to deliver substantial cost and time savings compared to more manual approaches in IT operations management.

**Data influences decision making and missing data can lead to unfavourable diagnosis and outcomes for your systems therefore ensure that your solution are always future proof.**

**Remember ! AI plus human is more powerful than either human or AI alone.**

# Thank You

**Manik Kashikar**

Cloud Solution Architect | Tech  Leadership |
Tech speaker