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Streamlining the automotive industry with **business flow** observability



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Introduction

The automotive industry is undergoing a period of unprecedented change, with disruptive technologies such as autonomous driving, electric vehicles and connected cars transforming the landscape. The effects of a complex IT landscape, diverse technologies, multiple service vendors and knowledge siloes in teams are already taking their toll on efficiency, cost and uptime. This whitepaper discusses how automotive companies can streamline their IT operations by using tools that enable business flow observability, embedded with AI/ML and automation capabilities. Benefits of these technologies include increased uptime, reduced issue resolution time, and of course, streamlined business and IT collaboration.

Typical challenges in the manufacturing industry



Lack of realtime tracking



Complex IT landscape, systems and technologies



Large volume of legacy applications



Reactive actions due to lack of business context



Poor quality of knowledge management and documentation



Lack of documented business processes and customizations



Multiple vendors supporting infrastructure, apps, DC etc.



and business governance

Lack of

integrated IT

Lack of process and change documentation (For example Ll, Ll.5, L2, L3 and L4 processes, finance, asset hierarchy, etc.)



Typical IT landscape and the current state in automotive manufacturing companies

•	A complex IT landscape has a mix of legacy, ERP and SaaS-combined systems with an increasing footprint of cloud-native systems that support their critical business operations.	1	Significant increase in manual effort and inefficiencies resulting in a higher cost of operations.
•	Multiple monitoring tools for on-premises, legacy, ERP systems, cloud-native applications and underlying infrastructure create non-curated alert storms to IT operations teams.	•	There is a lack of ability to predict critical failures and take proactive self-healing actions to avoid impact to the users.
•	The lack of correlation and insight from alerts and events coming from disparate sources result in high manual effort to triage and identify the actionable alerts and the corresponding root causes that can be fixed.	•	Poor understanding of the impact on business processes and metrics due to failures in the underlying application and infrastructure components.

Introduction to business flow observability, AI/ML and automation in the context of IT operations

As in many manufacturing organizations, there are thousands of business flows which ultimately contribute or impact high-level processes such as order-to-cash (O2C), procure-to-pay (P2P), etc. Many of these processes are orchestrated around multiple IT systems with additional manual/ad hoc processes as well. These business flows often rely on rules, standards and compliances. The common challenges are a lack of context and connections between the business process and flows with the IT systems. Per the CIO Survey, even after investing in over 10 different monitoring tools, teams have full observability into just 11% of their environments.

Some organizations use tools like:

- Business process management, which is a process and workflow repository.
- Power BI/Tableau reports on apps, infrastructure health and performance provides static view/reactive data for incident resolutions. However, just capturing in a dashboard without details on the root-cause analysis or the issue hierarchy by business impact creates more noise than meaningful value.
- Automation methods such as scripting, RPA etc., monitor and eliminate manual tasks and establish connections between multiple systems.



What is DRYiCE iControl?

DRYICE iControl empowers its users with seamless integration between their business processes and IT operations. It connects business and IT operations to make them more productive and accelerates the collaboration of business and IT operations.

iControl enables autonomous IT operations with advanced capabilities like AIOps, automation and reporting, as well as observability that provides the Operations team with visibility to both the problem and its source. It allows flexibility in analyzing a comprehensive set of data about applications and infrastructure at once in real time and in an autonomous way. It can seamlessly integrate with existing monitoring tools and provide a top-level view (or a command center view) of the enterprise's entire IT operations. DRYICE iControl can read the current state across the enterprise hardware and software, both on the premises as well as in the cloud.



How does DRYiCE iControl work?

Another feature is proactive anomaly and outlier detection using supervised and unsupervised machine learning models on data such as logs, trackers, events or metrics. DRYiCE iControl also includes capabilities to forecast trends and what-if scenario analyses to see the impact of changes downstream on apps/infrastructure.

Benefits of leveraging business flow observability tools and AI/ML automation capabilities in operation management within the automotive industry

- Improved visibility into application workflows
- Reduced mean-time-to-resolution (MTTR) and enhanced predictability and reliability of IT operations
- Real-time process performance visualization
- Hierarchical and impact drilldowns for an integrated view on complexity historical and predictive analytics to enable better architecting
- Customizable persona-based dashboards for better team accountability
- Transparency in performance statistics both for business and IT
- Improved customer experiences

Use cases for automotive companies

Nowadays, use cases for AI/ML and automation capabilities go far beyond IT management. Processes in supply chain management, customer experience and financial accounting are some of the prominent areas where we can see potential deployment of a business observability tool. A single source of truth can drive team collaboration and optimize the experience for events including software updates, new feature releases in the customer portal, DevOps etc. Operations teams benefit from a single source of truth through an intelligence system with precise pointers for root-cause determination.

Here is one example of aftermarket spare part ordering and fulfilment.



Case in point - DRYICE iControl for improving spare parts ordering and the fulfillment process

In this example, the subprocesses involved in spare part ordering and fulfilment are complex. There are multiple business KPIs and challenges faced by the industry including longer order processing time, increased shipping costs, part unavailability, low first-fill rates, increased back order volumes, low customer satisfaction due to part unavailability and more.

The data is spread across multiple systems such as ERP systems, standalone applications, manual integrations and batch jobs. To proactively detect errors, one needs to monitor the various applications, business flows, infrastructures and networks across these systems.

By using a business flow observability process, this can be automated with intelligent alerts. The business and IT teams can quickly diagnose an issue and take corrective actions, thereby reducing the time spent on issue diagnostics. Basically, this involves ingesting data from every layer of the tech stack and continuously analyzing it in real time with data analytics techniques (powered by AI/ML) to identify issues early. To find solutions for breakdowns or anomalies, we can also leverage self-healing or automated remediation wherever it is possible. For example, if a service is not running, an automation can be tasked to automatically restart it.

Best practices in implementation

As this is a new concept for a traditional business such as automotive manufacturing, we suggest stating with a few areas and scale it with the following steps:



Conclusion

The automation capabilities and deployment of business flow observability tools with ML and AI in the automotive industry can lead to multiple benefits and will increase in value with time. We have observed the following for our clients who have adopted business flow observability tools:

- Improved mean-time-to-identify (MTTI) and remediated incidents by up to 60%
- Real-time process performance visualization
- Reduced mean-time-to-repair (MTTR) and improved stability due to linking application observability to real-time business metrics
- Proactive management by detecting system anomalies before they affect the business or customers
- Reduced cost by providing a cockpit view and a central consolidation point for events
- Assistance with rearchitecting apps and system(s) by identification of areas that are ripe for re-engineering or automation

This start-small approach is important as many enterprises already have more than five to ten existing monitoring tools and there might be some reluctance to add more, fearing further complexity. In our experience, we have seen organizations with a long-term strategy of intelligent IT operations realize many other long-term benefits such as reduced total cost of operation and better team collaboration

References

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- Take a service-centric approach to observability data for truly effective AIOps
- Navigate disruption with Microsoft Cloud for Manufacturing
- AlOps Done Right

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