Automotive Parts Manufacturer Improves OEE by 10-15% with Digital & Analytics led Factory Analytics Solution

About the Customer

The customer is a pioneer in the automotive industry and develops highly integrated modules and plastic components for the industry. Originally founded in Germany in 1959, the client is now a global enterprise with operations spread in 9 countries across Europe, North America, South America and Asia employing 150,000 employees. The customer is a specialist in cockpits, door panels, bumper modules and innovative plastic vehicle body parts.

This case study describes how Motherson Technology Services USA Limited helped the customer generate a consolidated view of all suppliers spread across multiple locations and achieve significant cost savings and optimise processes using our big data & analytics solution.

Customer Challenges

The customer was facing capacity constraints and issues related to quality of output which was impacting delivery schedule and planning. They continued to face the below challenges to optimize operations, control and track spends across its manufacturing locations spread globally:Inefficiency in managing agent occupancy, activities and actions

- **Standardizing raw material expenditure costs:** Raw material cost varied from plant to plant. In an operation where raw materials account for almost 65% of all costs, there were plants that were losing money although they were making the same product

Customer Challenges

- **Getting insights to the below**
  - Inventory brought suppliers to assess utilization patterns
  - Standard price of purchased parts to optimize expenditures
  - Productivity & Efficiency
- **High scrap volumes generated:** The customer was facing scrap volumes of upto 6% in the injection moulding process
- **High downtime in production process:** The customer witnessed a downtime of about 20% in the injection moulding process leading to losses and wastage.
- Inconsistency of data across multiple systems
- Lack of a centralized system to track spending across multiple production centres

Our Solution

We implemented Master data management (MDM) solution which was a custom analytics platform built on a Microsoft BI stack that connected to their existing Manufacturing Execution System (MES). We augmented their data collection points where necessary with RFID and optical readers. All this data was fed in real-time using an integration tool into our factory analytics platform that provided detailed comparison by vendor, parts and locations that allowed global procurement contracts to be negotiated with data based insights. Using the solution the customer was able to:

Monitor production performance where analytics showed OEEE and machine utilization plus the total cost of quality

Monitor production line efficiency and overall productivity in real-time via Dashboards that received data updates in real time were displayed on the plant floor at various stations

Get a centralized view of spends by organizing all purchase, invoice data from multiple units and companies into a single view
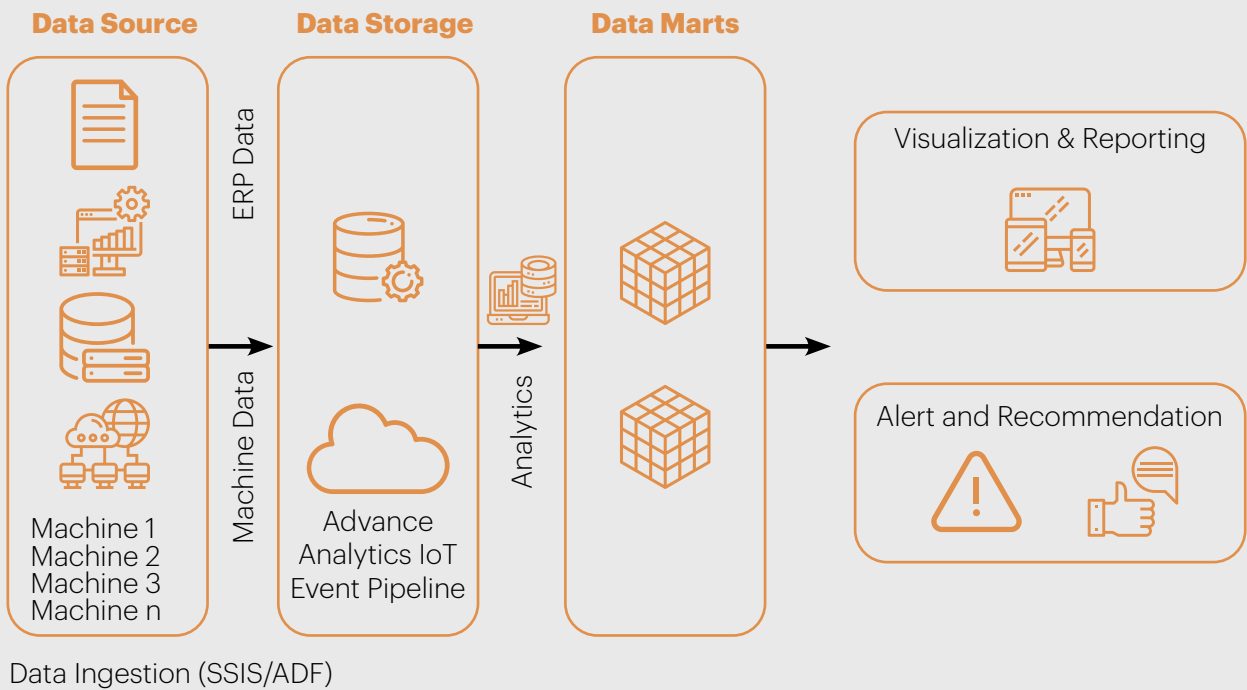
Create a logical supplier hierarchy and group product view

Achieve an overview of inventory of produced/ assembled parts and also allowed for performance measurement

Engagement Architecture

Data Source

Machine 1
Machine 2
Machine 3
Machine n

Data Ingestion (SSIS/ADF)

ERP Data

Machine Data

Data Storage

Advance Analytics IoT Event Pipeline

Analytics

Data Marts

Visualization & Reporting

Alert and Recommendation

Benefits

With our Big Data and Analytics service based Factory Analytics Solution, the customer was able to leverage real-time analytics to derive the below benefits

Reduce costs of raw material procurement by 2% - $6 Million annually

Improved definition of inventory level maintenance

Get a unified view of the complete spend across all suppliers, subsidiaries and plants as well as purchase price variance globally.

Creation of mechanisms for optimum reordering and demand forecasting of raw materials basis insights from data

Identify bottlenecks in the Injection, Paint & assembly process

10-15% improvement in OEE

10% improvement in Asset Utilization

10% reduction in scrap

Reach out to us

● Our Presence   ● Customer Locations

Motherson Technology Services USA Limited is the American entity of technology and industrial solutions business division of Motherson Group, one of the largest manufacturers of components for the automotive and transport industries worldwide with 150,000 employees across the globe.

We are a global technology company that offers a consulting-led approach with an integrated portfolio of industry-leading solutions encompassing the entire enterprise value chain. Our technology-driven products and services are built on two decades of innovation, with a future-focused management philosophy, a strong culture of invention and co-innovation, and a relentless focus on customer-centricity.

Providing solutions that cater to more than 430+ customers across Automotive, Manufacturing, Hi-Tech, Financial services and Lifesciences & Healthcare domain since 2006, we deliver the best-of-the-breed and out-of-the-box software solutions, specifically tailored and customized to meet your business needs. We provide smart manufacturing, digital and core engineering solutions leveraging Industry 4.0 to help enterprises enable their digital transformation journey.

Motherson Technology Services believes in supporting companies to utilize data, analytics, IoT, and other cloud-based applications to transform their operations. We start by understanding your business needs and defining how to leverage the most suitable technologies to achieve the desired business outcomes. Our technology-agnostic approach puts us in a unique position to help you thrive in today's fast-changing and highly competitive world.

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