PALBIS

ALBIS PLASTIC: Optimizing Production Performance with Predictive Quality Management

ALBIS PLASTIC GmbH is one of the leading globally operating companies in the distribution and compounding of technical thermoplastics and thermoplastic elastomers. To help maintain high product standards, the manufacturer wanted to combine machine data with process data to gain early insights into potential production vulnerabilities. Using a solution based on SAP® Cloud Platform, SAP partner ISR Information Products AG helped establish a predictive quality platform that enables ALBIS to mitigate quality risks before they become issues.







PUBLIC

Results

Future plans

Using Advanced Analytics to Enable Quality Improvements with SAP[®] Solutions

Before: Challenges and Opportunities

- · Analyze quality risk patterns across manufacturing locations
- · Understand where quality issues are most likely to occur
- · Direct resources to improve product and process quality

Why SAP and ISR Information Products AG

- Single, centralized solution for predictive quality analysis running on SAP® Cloud Platform
- Integration of process data from multiple instances of the SAP ERP application with machine data from production lines using SAP Cloud Platform Big Data Services
- Real-time collection of machine data, using the SAP Leonardo® Internet of Things solution
- Expertise in data science, technology, and application development provided by ISR Information Products AG

After: Value-Driven Results

- · Improved visibility and analysis of production line performance
- An architecture blueprint that can be reused for other Big Data analytics use cases
- · Minimal system maintenance requirements thanks to cloud-based software as a service

!ALBIS

"By analyzing key risk areas in our production processes, we can take necessary steps to improve manufacturing efficiency, thus increasing profitability and **giving customers higher-quality products**."

Matthias Schulz, Head of Digitalization, ALBIS PLASTIC GmbH

~5 TB

Of machine data integrated with data from SAP ERP

50

Real-time sensor updates per second for each connected machine

Featured Partner

ALBIS PLASTIC GmbH Hamburg, Germany www.albis.com Industry Products and Services Chemicals Distribution and compounding of thermoplastics

EmployeesRevenue1,400€1.1 billion

Featured Solutions SAP Cloud Platform, SAP Leonardo Internet of Things, and SAP Cloud Platform Big Data Services



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Running High-Quality Processes to Produce High-Quality Products

Solution

ALBIS PLASTIC GmbH is one of the leading globally operating companies in the distribution and compounding of technical thermoplastics and thermoplastic elastomers. In addition to products from well-known plastic manufacturers, ALBIS offers a diverse range of high-performance plastics, compound solutions, and masterbatches to fit specific customer requirements.

Fixing issues before they become problems

With quality a key priority, ALBIS wanted to introduce predictive quality analytics across its compounding operations. "We didn't just want to react to fix issues that had already occurred," says Matthias Schulz, head of digitalization at ALBIS. "We wanted to use analytics and Big Data management technologies proactively to help pinpoint areas of the production process where things were most likely to go wrong. In this way, we could address potential risks before they became issues." However, disparate silos of locally stored information meant that conducting predictive quality analysis across all manufacturing locations would be tough. "Our equipment generates three to five terabytes of manufacturing execution information each year, but this is stored locally, meaning we weren't able to analyze it," explains Schulz. "In addition, process data was held in different instances of our legacy manufacturing execution system and the SAP ERP application at each manufacturing site. We needed to combine all of this information on one unified intelligent platform."



Solution

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Building a Predictive Quality Platform in the Cloud

ALBIS wanted the new predictive quality to be cloud based and decided on a solution based on SAP[®] Cloud Platform. "Combining advanced data management capabilities, in-memory computing power, and comprehensive managed services, SAP Cloud Platform enables deep integration with our existing SAP software landscape," says Schulz.

Combining manufacturing and process data The manufacturer turned to SAP partner ISR Information Products AG (ISR) for help with configuring and deploying the software. The implementation team first used the SAP Leonardo[®] Internet of Things solution to gather the data from machine sensors on the production lines. This production data was then combined with process data from each instance of SAP ERP using SAP Cloud Platform Big Data Services.

A custom app designed by ISR and running on SAP Cloud Platform uses advanced analytics to review the historical production and process data. Based on this, the solution analyzes patterns associated with previous quality issues and uses these to identify key quality risk areas within the process. Results are communicated to quality management teams using intuitive reports and dashboards.



"By combining the expert knowledge of ALBIS Plastic employees, SAP products, and our consulting know-how, we've laid the foundation for innovation in IoT and advanced analytics."

Kay Rohweder, Senior Manager, ISR Information Products AG

s Solution

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Enhancing Processes to Improve Production Quality

Thanks to the predictive quality platform, ALBIS gains valuable real-time insights that help it enhance its compounding operations and quality control. "SAP Cloud Platform provides a **central source of truth** that gives us visibility into which parts of the production process are most vulnerable to quality issues," states Schulz. "This enables us to direct resources appropriately to make changes that improve performance, helping us increase quality and productivity."

As well as contributing to profitability for the company, this enhanced performance also enables it to improve the customer experience. "Increased process reliability helps ensure **consistently high** manufacturing quality," explains Schulz. "Meanwhile, minimizing quality issues reduces the risk of production delays so we can deliver customer orders on time."

Scaling to process large data volumes

The cloud-based infrastructure enables ALBIS to process large quantities of data. "With SAP Cloud Platform, we have **the flexibility to scale up and down quickly** to accommodate changing data volumes, helping us stay agile in our response to shifting business requirements," says Schulz. "Furthermore, the pricing model means that we do this in a cost-effective way."



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Objectives

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Addressing New Use Cases to Increase Operational Efficiency

ALBIS plans to repurpose the cloud-based infrastructure for other use cases. "We've established an architecture blueprint that we can reuse to analyze and predict vulnerabilities in other process areas across the organization," says Schulz. "Thanks to SAP Cloud Platform, we can **set up new projects within weeks** on one unified data science and business application platform in a flexible and cost-effective way."

Achieving a competitive edge

Schulz concludes, "This solution offers a backbone for all our advanced analytics and data science requirements, providing us with the ability to integrate new data sources in the future. In this way, SAP Cloud Platform is enabling us to use the latest technologies to bring our enterprise processes to another level and achieve a competitive edge."



Architecture for a Cloud-Based Predictive Quality Platform



Solution

The figure shows how the predictive quality platform based on SAP Cloud Platform gathers live production data using the SAP Leonardo[®] Internet of Things solution. The solution combines live data with process data from SAP Business Suite software using SAP Cloud Platform Big Data Services. A custom app then analyzes the combined data to identify process vulnerabilities.

Figure 1: Solution Architecture for the Predictive Quality Platform at ALBIS



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