

CUSTOMER CASE STUDY

Modernizing Data Infrastructure for Operational Independence

Migrating mission-critical workflows to Microsoft Fabric and Databricks

Solution: Microsoft Fabric and Databricks **Industry:** Process Manufacturing **Use Case Focus:** Data Infrastructure Migration

GOALS

- Support the company's complete transition away from its parent organization's legacy IT systems.
- Establish fast and scalable replacements for mission-critical operational reporting workflows.
- Modernize the existing data infrastructure without disrupting daily tank monitoring activities.
- Deliver user-friendly, high-performance applications integrated with Power BI and PowerApps.

SOLUTIONS

- Rebuilt the tank balance analysis workflow using Seeq PI Tags and Microsoft Fabric Lakehouse.
- Deployed an automated Microsoft Fabric notebook to monitor tank temperatures and send threshold alerts.
- Created a high-frequency Databricks notebook to load Seeq data into a PowerApps data catalog.
- Optimized data ingestion by switching from SPy to the Seeq API with multithreading.

CHALLENGES

- Operational processes depended heavily on a legacy codebase and a deprecated data source.
- Critical tank monitoring activities required immediate modernization to prevent operational disruptions.
- Existing data pipelines suffered from high latency and slow data transfer speeds.
- System separation from the parent firm mandated rapid deployment of independent data workflows.

RESULTS

- Eliminated all operational dependencies on the parent company's legacy systems.
- Reduced data latency from 120 seconds to 10 seconds for the PowerApps data stream.
- Halved data processing times across critical operational workflows.
- Delivered seamless, interactive reporting through Power BI dashboards mirroring original Excel formats.

EXECUTIVE SUMMARY

During a corporate divestiture, an industrial organization needed to rapidly migrate its mission-critical operational workflows away from its parent company's legacy data systems. To achieve operational independence, the company implemented a modern data infrastructure leveraging Microsoft Fabric and Databricks. This transition rebuilt tank balance analysis and temperature forecasting models while optimizing high-frequency data streams. The project successfully eliminated legacy dependencies, halved processing times, reduced data latency by over ninety percent, and delivered seamless, interactive reports for business users.

The Challenge of Divestiture and Legacy Systems

The client faced a critical operational challenge during its transition away from its parent organization's legacy IT infrastructure. Daily operations relied heavily on deprecated data sources and a complex, outdated codebase that could no longer be supported. Key business workflows, including critical tank balance analysis and real-time temperature monitoring, required immediate, scalable replacements to prevent costly operational downtime. Without a modern and independent data ecosystem, the business risked losing visibility into vital asset metrics, threatening overall productivity and regulatory compliance during the corporate separation phase.

Architecting the Fabric and Databricks Solution

To address these challenges, a comprehensive multi-phase data migration and automation strategy was executed. The team rebuilt the tank balance analysis pipeline by shifting inputs to Seeq PI Tags and processing data within a modern Microsoft Fabric Lakehouse. For real-time monitoring, an automated Fabric notebook was developed to run every fifteen minutes, instantly alerting operators of critical temperature threshold excursions. Additionally, a high-frequency Databricks notebook was engineered using the Seeq API and multithreading to feed data directly into a PowerApps catalog, drastically accelerating system-wide integration.

Achieving Independence and Enhanced Performance

The modernization project successfully achieved complete operational independence for the client while significantly upgrading system performance. Transitioning to the optimized Seeq API with multithreading reduced the latency of the PowerApps data stream from 120 seconds down to just 10 seconds. Overall data processing times across the business were cut in half, and the new Microsoft Fabric architecture enabled seamless end-user adoption by mirroring traditional Excel report formats within Power BI dashboards. The client now operates with a scalable, high-performing, and fully independent data foundation.