Leading Food Specialty Manufacturer Optimizes Asset Utilization, Reduces Losses

DSM's Food Specialties division relies on aspenONE® Production Management & Execution (PM&E) and real-time analytics to synchronize orders, equipment, and data for production improvements.

DSM's Food Specialties division is a global supplier of advanced ingredients for the food and beverage industries, which the company manufactures using fermentation and enzyme technology. At DSM's Delft, Netherlands site, a corporate manufacturing initiative sought to ensure optimum asset utilization, identify improvement projects, and provide metrics for monitoring progress toward manufacturing excellence.

Given the complex manufacturing environment, the primary challenge was to optimize asset utilization based on real-time calculations of losses. Production data needed to be linked to production orders and equipment used. The site-wide MES aggregated plant data with order information from SAP into a batch context to determine losses.

aspenONE PM&E is providing timely insight into the magnitude and nature of losses from raw materials, quality, and production time. Analysis of utilization data provides a clear focus for improvement projects.

Customer Profile

DSM
Specialty Chemicals

Challenge:

Optimize asset utilization based on real-time calculations of losses in a complex manufacturing environment

Solution:

aspenONE PM&E aggregates production data with order information from SAP to calculate material, yield, and production time losses

Benefits:

- Ensures timely insight into the magnitude and nature of loss on all equipment
- Analyzes utilization data to provide a clear focus for plant improvement projects
- Offers a single source of data plant-wide, ensuring accessibility for rapid, accurate decision making

Obtaining Accurate Insights into Complex Batch Operation

The objective of this project was to gain detailed insight into production losses and translate that data into actual costs. Once the cost of the losses was understood, asset utilization could be optimized. One challenge in accomplishing this was the complexity of batch operations. The process has many possible routes, merges, and splits, making it difficult to collect real-time production data and consolidate into a batch context. Another challenge was the complexity of loss calculations. Because of the complexity of the batch operation and all the possible combinations of equipment used and operation sequences, there are many interdependencies governing whether an asset is available and able to be used. This complicates the loss calculations and makes it difficult to understand where losses are occurring.

To overcome these challenges, real-time production data needed to be linked to the production orders automatically. The solution then needed to calculate the actual cost of all production losses—taking into account requirements defined in production orders—and aggregate that information into easily understood user dashboard displays. The solution must also track orders, stock, and yield accurately and in real time.

Automatically Managing Batch Information and Loss Calculations

DSM and AspenTech partner ICT Procos implemented aspenONE PM&E for asset utilization optimization. aspenONE PM&E collects all data and puts it into a batch context. Production orders are obtained from SAP and merged with batch records in aspenONE. A web portal provides a high-level view of key metrics, allowing the site to monitor the plant easily and to take action to keep utilization on track. Extensive reporting is used to communicate status and identify issues that need to be addressed. The site also has the ability to drill down into process details, making root cause analysis much easier for this complex batch operation.

Real-time Utilization Data Optimizes Assets to Minimize Losses

aspenONE PM&E provides the business with timely insight into the magnitude and nature of losses on all equipment: material, quality, and production time. This is enabled by the solution's flexible batch record structure, analytical capabilities, and integration with ERP. These attributes allowed DSM to aggregate their data into the right batch context for accurate calculations of losses, associating those with specific production orders. Further, the analysis of the utilization data provided the business with a clear focus for improvement projects.

About AspenTech

AspenTech is a leading supplier of software that optimizes process manufacturing — including oil and gas, petroleum, chemicals, pharmaceuticals and other industries that manufacture and produce products from a chemical process. With integrated aspenONE solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit www.aspentech.com.

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