

Enabling Real-Time Process Intelligence and Operational Efficiency with Aether for a Global Chemical Industry Leader

Client Profile

A global chemical industry leader manufacturing polymers, chemicals, and fuels across a multi-plant operating network.



ITHENA's Aether platform unified sensor and operational data across a chemical manufacturing network into an AI layer. This enabled predictive anomaly detection and real-time KPI visualization, accelerating decisions that reduced downtime and boosted productivity.



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CHALLENGES



The client struggled with:

- Limited ability to detect equipment anomalies early, with unplanned downtime repeatedly reducing production efficiency and margins
- Lack of real-time visibility into plant-level operational KPIs, leaving managers dependent on delayed, siloed reporting
- Difficulty forecasting the impact of volatile feedstock costs on production planning across multiple facilities
- Reliance on manual analysis to identify process inefficiencies, slowing response to emerging operational issues

SOLUTIONS



ITHENA's Analytics AI Platform, Aether, enabled the client to:

1

Unified Sensor Data Integration

Consolidated equipment and process data from across multiple plants into a single real-time intelligence layer

2

Conversational Data Access:

Enabled engineers and operations leaders to query plant and equipment data in natural language, cutting investigation time

3

Predictive Anomaly Detection

Identified early signs of equipment failure and process deviation, reducing downtime across the manufacturing network

4

Real-Time Visualization

Delivered live operational KPIs directly to plant managers, removing delays caused by static, manually compiled reports

5

GenAI-Powered Recommendations

Generated actionable maintenance and process optimization, accelerating response to emerging inefficiencies

OPPORTUNITY FOR IMPACT



22%

Reduction in
unplanned downtime

18%

Improvement in
anomaly detection

15%

Boost in plant
productivity

12%

Reduction in
analysis effort