

# Operational BI Case Study: Leading Global Manufacturer

## Active Intelligence Engine<sup>®</sup> (AIE<sup>®</sup>): An Analyze Everything Platform

A top global manufacturer selected Attivio AIE to provide a deeper level of insight into the operational performance of its engines used around the world.

AIE enabled the company to go beyond analyzing structured data (databases) alone to **Analyze Everything** – including insights drawn from text-based service technician notes and CRM case notes; operating exceptions logged from sensor data and more.

Managers now have full operational intelligence that presents **what** performance trends are taking place, as well as **why** – enabling timely, informed action to improve service, customer satisfaction and cost metrics.



**Key challenge: Provide more proactive, operational intelligence into product performance.** A leading global machinery manufacturing firm wanted to better monitor the performance of their engines used by customers around the world. The engines operate under a wide spectrum of changing climates and environmental conditions, which can impact proper functioning in many ways. By more quickly and effectively analyzing the root causes and conditions behind changes in operational performance, the company could significantly improve service responsiveness and customer satisfaction, as well as reduce downtime and service costs.

The company recognized that its existing analytic focus on KPIs and other metrics from the company's data warehouse explained "what" trends were occurring but offered little meaningful insight as to "why." For a truly complete operational picture, additional information beyond databases (*structured data*) had to be integrated, including insights buried within service technician reports, case management notes and other text-based *unstructured content*; operating exception events logged from engine sensor data (*semi-structured data*) and more.

**Analyze Everything: data, content... with no data modeling required.** After a review of Oracle Endeca and Microsoft FAST, the company selected Attivio's Active Intelligence Engine. AIE was chosen for its flexibility, open support of the company's TIBCO Spotfire business intelligence (BI) and data visualization tool and the ability to integrate, join and present related insights drawn from both data and text-based content.

As an "analyze everything" platform, Attivio AIE integrates and correlates *all* enterprise information, regardless of data type or original source, *with no advance data modeling required*. Attivio then presents this unified information via standard BI tools with native SQL support and ODBC/JDBC connectivity, or simple Google<sup>®</sup>-like search interfaces.

**Providing a 360 degree view of engine performance.** The company identified several essential performance metrics, requiring data from multiple sources:

- Performance KPIs and quality metrics, maintained in a data warehouse
- Sensor data logs noting operating exceptions
- Service status data (engine utilization, service hours since last maintenance, etc.)
- Customer Resource Management (CRM) records

Attivio AIE integrated all of these structured data sources into its universal index without requiring any advance data modeling; which in itself significantly accelerated the BI iterative development process. Additionally, AIE performed automated *analytic workflows* on incoming data tables to

**Time-to-market was critical:**  
The company had estimated 18 months to deploy the pilot using legacy tools.

**Attivio AIE was deployed in five weeks.**

**Customer praise:** “Setting a new standard for BI time to market... We should use Attivio AIE and follow this approach for all our strategic projects.”



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calculate the performance metrics, including counts of service requests, engine failures, alerts with readings beyond normal levels, and more.

**Completing the picture with human-generated content.** The company completed its operational picture by integrating and correlating unstructured content, including:

- Customer case management notes
- Engine maintenance system notes (i.e., extended ‘memo’ text fields containing service technician notes and comments)

Attivio AIE ingested these sources of human-generated content into its universal index, after applying advanced text analytics including entity and key phrase extraction, entity normalization, synonym expansion and spelling correction. Attivio’s text analytics maximize the analytic value of unstructured content by making text easily findable and joinable with other related information.

**Achieving a deeper level of operational intelligence.** Using Attivio AIE as its new *unified information* source, the project team could focus on developing expanded operational BI dashboards using Spotfire. The dashboards present increasing levels of operational performance detail, by customer, engine type, and individual engine.

Managers can now explore and discover new correlations between changes in metrics, recurring key phrases (such as ‘engine overheating’ extracted from service notes) and unusual operational events, and then match them against other data collected and details of service work performed. All related data and content is automatically JOINed together by AIE at query time – again, with no data modeling required – with complete security.

By integrating, correlating and presenting all key structured and unstructured sources of information into a single analytic dashboard, the company achieved the new, deeper level of operational intelligence necessary to more quickly and proactively identify the root causes of problems and take corrective action – well beyond what would be possible working with databases alone.

**Setting a new standard for operational insight and BI time to market:**

Attivio’s operational BI pilot was ready to present to the key business stakeholders in just 5 weeks, easily beating the company’s original project estimate of 18 months using legacy tools.

Feedback was remarkable: the company’s internal BI team and Attivio were praised for “setting a new standard for BI time to market.”

Impressed with the complete agile operational BI delivered, stakeholders agreed the company “should use Attivio AIE and follow this approach for all our strategic projects.”