

The Insights Story

Wipro gave Vedanta real-time visibility into 890 production parameters and delay accounting information for 18 critical locations at one of its alumina refinery by implementing an MES solution

Industry landscape

Market volatility, high input costs, lack of captive bauxite and a slump in prices have been hitting the aluminum industry hard, forcing many alumina refineries to either shut down or operate at a quarter of their actual production capacity. Leading market players are looking to reduce operating costs, optimize asset utilization and increase productivity to stay competitive.

Company background

Vedanta Limited is a diversified resources group that produces oil and gas, aluminum, silver, zinc, lead, copper, etc. The company operates in several geographies including South Africa, Australia, India and Ireland. In India, it has a captive cogeneration power plant and a 1 MTPA greenfield alumina refinery at Lanjigarh in Orissa.

The Opportunity

Vedanta was dealing with challenges related to time-reliable data availability at its Lanjigarh plant. The decision makers needed more visibility into data from various sources across the plant. For this, it needed a partner who could put together a digitally integrated solution to monitor key parameters related to production and operational efficiency as well as to capture KPIs in real time. In an effort to reduce operating costs amid the global price gloom, the company was looking to improve asset utilization while producing high quality alumina. Vedanta wanted to make its Lanjigarh plant a self-sustained manufacturing unit in terms of cost advantage and resource availability.

Solution

Wipro rolled out a state-of-the-art MES solution for Vedanta's Lanjigarh alumina refinery.

The solution was implemented using the ISA-95 framework and provide the following benefits:

- Integration of key production and quality parameters into SAP
- Schneider Electric's Struxureware Plant Operation Ampla system provided data capture and analysis for plant production, process parameters, downtime, weighbridge integration and quality results. To simplify data management, a purpose built Web interface was created for manual data entry and reporting
- Real-time data integration with Honeywell's Process Historian Data/Distributed Control System (PHD/DCS), legacy weighbridge systems, site laboratory and log book system

Business impact

The solution provided a seamless integration of legacy and new systems for production, quality, weighbridge and log book applications. It established a single platform through which disparate data sources and applications were converged and helped to secure data flow between the control and the IT networks.

- Stakeholders and senior management now have 890 production parameters and 708 quality parameters at their fingertips
- Automation of lab data for 11 devices, reduced manual intervention and improved accuracy; auto posting of production and quality data into SAP via 6 BAPI
- Delay accounting information available for 18 critical locations
- Fully automated and timely generation of 8 daily reports and 25 on-demand reports
- 10 automated logistics reports, including raw materials and product dispatch
- Access to key data is available immediately rather than after 6 hours of manual data aggregation
- Automatic SMS and email alerts for deviation in key KPIs to end users

Quotes

"Wipro's automation and reporting tools have helped our users and production staff, and also improved our process control. We have seen a significant drop in effort for creating reports every day"

- **Satish Kumar**, Head of Process Control at Vedanta Limited, Lanjigarh

"Wipro has helped digitize our plant operations end-to-end and provided real-time visibility into plant control and management. We can now make the right decisions at the right time and assimilate past data for business improvement"

- **Bimalananda Senapati**, Plant Head at Vedanta Limited, Lanjigarh

About Wipro

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