

Anglo American

Expanding Data Access To Drive Performance



Anglo American is a global and diversified mining business that provides the raw materials essential for economic development and modern life. Headquartered in Santiago, its Copper Business is one of the world's leading copper producers. Anglo American is committed to working with key partners and stakeholders to unlock the long-term value in the resources it represents both for shareholders and for the communities and countries in which it operates. When its Copper Business was looking for new ways to drive innovation and empower users, Anglo American deployed the PI System from OSIsoft to help identify areas for improvement and make operational information more accessible to its workers in Chile.

“OSIsoft has been a strategic partner, helping us keep the pace and plan ahead.”

– Fernando Romero, Manager Process Control

Situation

In 2013, Anglo American's five copper operations in Chile were responsible for 26% of the company's revenue. To differentiate itself from its competitors (and increase overall profitability), Anglo American's Copper Business focuses on delivering copper more efficiently and with a smaller environmental footprint. “The only thing we can control is production and quality. We have to have a better way of producing copper than other companies,” said Fernando Romero, Manager Process Control for Anglo American's Copper Business. “We used to teach our operators to focus on throughput and quality, but now we have to demonstrate, too, that we are responsible in the use of water and energy.”

To achieve these goals, the company invested in tools and processes designed to drive process control improve-

ments. Sensors and instrumentation within the operations fed data into a wide range of systems including: process control, environmental monitoring, asset health monitoring and analysis, Distributed Control Systems (DCS), PLC, and SCADA. However, the data was scattered across different software tools and information was often only available to a few select employees.

In order to use the data to improve operations, managers had to request archived data from multiple IT systems, across multiple departments, and analyze it after the fact. It was labor intensive and slow. Operators, with hands on knowledge, could not respond to data dynamically and the few individuals who were responsible for identifying potential improvements had a limited view of operations.

That made it hard to identify opportunities for improving performance across the enterprise and it meant that standards were being set without really knowing what the best practices in the field were. Anglo American wanted to standardize best practices across the Copper Business and empower all employees to help optimize operations. “To reach that position, we needed to put the information that lived in our diverse systems into the mind of our operators and managers,” said Romero. With an initial project goal of cutting maintenance costs by 1%, improving energy efficiency by 1% and increasing equipment and process availability by 0.2%, Anglo American signed an Enterprise Agreement with OSIsoft.

Solution

Previously, the PI System had been installed at a few of Anglo American's mining operations in Chile but only a limited number of users had access to that data. In December 2010, the company signed an Enterprise Agreement with OSIsoft and in 2011 it began deploying the PI System across all operations in Chile.

The expanded PI System collects data from all the assets and processes at each site. With the support of the OSIsoft Center of Excellence, Anglo American is developing a standard way of organizing its enterprise data using PI Asset

Framework™ (PI AF), providing users with a consistent data framework. This makes information easier to find and allows operations to run real-time models on assets.

Data from the PI System is now available to all employees through PI ProcessBook™ and PI DataLink™. Users can access this data for custom analysis, visualization and reporting, based on their own roles and responsibilities. In addition, everyone has real-time visibility into plant operations.

Benefits

The PI System has been a powerful tool for helping Anglo American extract value from its data. Democratizing access to the data is improving collaboration and encouraging ownership among engineers and managers. The combination of better data and more collaboration is leading to operational improvements, improved long-term planning, and more strategic management of the company resources.

“Operators can now look at the symptoms of the plant, in real-time, and diagnose their performance,” Romero says. “We are training operators to be more responsive — more aware of the impact of their decisions have on the process and on the environment. It’s a more expansive view of the entire operation,” Romero says.

For example, smelter operators have used PI System tools to create custom views of their process that compares cur-

rent performance to key operational metrics. Operators can validate their performance not only in terms of smelting output, but in terms of the energy and water required to achieve that output, the quality of the output, and the associated emissions. This allows operators to fine-tune their efforts (based on all the information) to dynamically optimize processes while accounting for constraints like SO2 emissions.

“How people use technology is not predictable,” Romero says. “Sooner or later, they start to use it in new and different ways, combining this data and that data. They start to feel in control of the process.”

By opening access to information, Anglo American’s Copper Business is now able to improve critical management and decision-making systems throughout the company, driving long-term planning and process improvements. The EA is a critical piece for helping Anglo American deploy technology in a way that enables its vision of a more dynamic and democratic approach to process control improvement. “You need a partner that understands your needs and speaks your language to help drive the implementation,” Romero says. “With the EA, OSIsoft has been a strategic partner, helping us keep the pace and plan ahead for how this technology can be used. This is not a short-term project, and technology is not our business. We need to be partnered in this journey.”

Business Challenge

- The Copper Business of Anglo American wanted to find new ways to improve production, increase operational efficiency, and lower its environmental impact.
- Data needed to optimize processes and measure the impact of changes was locked in disconnected systems which only a few people could access.
- Operators could not compare current operations to corporate metrics.
- Engineers were defining best practices based on limited data.

Solution

- Anglo American in Chile signed an Enterprise Agreement to roll the PI System to all of its copper operations in the country.
- PIAF is being implemented with EA support team to unify data, make information easier to find and enable process standardization.
- Anglo American employees in Chile are gaining access to real-time operations data.

Customer Results

- Engineers and managers can now create their own visualizations and reports to drive process improvements locally.
- Operators can view real-time operations in the terms of production, energy usage, water usage, quality, and emissions which aids in fine-tuning processes.
- Lessons learned at one site can be easily shared, amplifying their impact across all sites.