Mining — Supply Chain Efficiency

Future success in the mining industry is about managing productivity and improving efficiencies. Mining environments are becoming increasingly dynamic. The amount of reaction time that is available for planning teams is decreasing. New tools and methodologies are available today that help to optimise sustainable mining operations across all the functional areas so that throughput, quality, and profit can be improved.

Connectivity
The Internet of Things and the proliferation of Big Data provide mining companies with a wealth of real-time information that identifies opportunities to improve operations, from pit to port. For example, condition monitoring and predictive maintenance analytics software can identify equipment performance issues before they cause delays or stoppages. Sophisticated planning and scheduling tools integrate data from traditionally "silo'd" supply chain functions so that decision-makers can see how even a small upfront change can have large cost and quality impact downstream.

Sustainability
Extracting and refining ore is a complex, energy-intensive process. Optimizing energy use and reducing carbon footprint is usually beyond a conventional control system. More advanced systems collect, store, and integrate all energy-related data to create a layer of energy intelligence that exposes energy waste or unused capacity. Visualization dashboards simplify verifying and reporting on CO2 emissions, effluent and waste, as well as water conservation.

Efficiency
Mining companies are compensating for a highly volatile commodity market and skyrocketing operational costs by focusing on improving efficiency. But a collection of individually efficient equipment does not necessarily ensure an efficient operation. Schneider Electric’s suite of mining applications integrates data from process control, operations management, and energy management to provide a holistic view of all operations. This enables personnel to make strategic decisions about improving efficiency.

Reliability / Safety
Mining operations involve thousands of processes with myriad variables. Dynamic process simulation tools leverage real-time data to mimic the real mining process to validate operational reliability. Operator training systems use the same technology to provide a realistic virtual 3D training environment that teaches newer operators to respond appropriately to abnormal conditions. Such systems have been shown to lead to fewer unplanned shutdowns, accidents, and workplace safety claims.

This summary has been drawn from the more detailed article “Schneider Electric: Mining — Supply Chain Efficiency.”

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