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Barrick Gold: Turning data into gold

Headquartered in Toronto, Canada, Barrick Gold is one of the largest gold mining companies in the world. With mines in 11 countries, Barrick creates a wealth of data, tracking roughly 250,000 tags across the enterprise. For over 20 years, Barrick has relied on PI System™ to drive insight, action, and substantial cost savings.

The mining giant has engaged the PI System to become what it calls a "gold price agnostic" operator by bringing production costs to the point where even large commodity price swings will not cause major disruptions.

One goal the company has accomplished with the help of the PI System: better predictive maintenance at its Cortez mine in Nevada. Extracting and refining that gold is a laborious, mechanically intensive process. The machinery involved in that process is expensive, and so is downtime caused by mechanical failure. Cortez is investing in predictive maintenance through IIoT and data analytics, using sensors and machine learning to detect potential equipment problems before they escalate into failure.

To gather information on assets that are not inherently IoT-enabled, Barrick uses sensors and vibration monitoring software from Petasense. Machine learning algorithms use frequently collected sensor data to

generate an equipment health score, which can be tracked for declines that might indicate a potential problem. Site engineers use PI System tools to integrate Petasense data with other sources and to provide clear, intuitive access to that data for a variety of users.

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Since its inception in 2018, the predictive maintenance project at Cortez has begun to pay off quickly. The first potential defect was identified within a month of the project launch. Since then, more than half a dozen major equipment failures have been avoided. A single early fault detection for one piece of equipment alone saved the company US$600,000*.

"We've reduced unplanned downtime and repair costs, and improved the overall efficiency process"
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Deb Dewald
PI Administrator, Barrick Cortez

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