Optimising predictive maintenance

Improving early failure detection and reducing machine downtime

Goal

A global mining firm was seeking to reduce the amount of time its equipment and machinery were inoperable due to maintenance and repair.

Insight and Action

QuantumBlack adopted a dual approach to analyse the reliability of the dry-plant machinery. We used a proportional hazards model to assess the probability of machinery failure based on a range of factors such as number of operating hours and additional considerations such as type of ore, load, and weather.

We then created analytical models capable of detecting incipient failures based on various sensor inputs such as motor voltage, current, and temperature.

Our analytics highlighted a material opportunity for solving persistent early conveyor belt failures.

Results

88%

Of failures detected within a seven-day window