Context

How can Monalco Mining reduce ore-crusher maintenance spending by at least 20% over the coming year? The price of iron ore has declined due to increased supply, but ore-crusher maintenance costs appear to provide us with a means to attenuate recently observed margin compression.

Criteria for Success

Success will be achieved when we have reduced ~ 20% of ore-crusher maintenance expenses by year's end.

Scope of the Solution

Our cost reduction campaign is limited to the iron-ore crushers themselves. The crushers should require only one repair event per three years, per OEM documentation. Internal documents show we experience repair 3x as many events annually – likely due to running the machines above the recommended capacity.

Constraints within the Solution Space

Company executives believe they know what is being done wrong, but I have yet to hear of the data being audited by any controller or public accounting firm. Double-checking the numbers is rarely a waste of money. Time is a significant constraint (see above), as well as maintaining production while addressing defects affecting mission-critical systems.

Key Stakeholders

OEM rep, CFO, Individuals directly in change of operating the machines, Chanel Adams – Reliability Engineer, Jonas Richards – Asset Integrity Manager, Bruce Banner – Maintenance SME, Jane Steere - Principal Maintenance, Fargo Williams – Change Manager, Tara Starr - Maintenance SME

Required Data

1. Data Historian - Contains information on how many tonnes of iron ore crushed todate.
2. Ellipse - Includes old work orders that used to be raised for our equipment, before our upgrade to SAP.
3. SAP - Most up-to-date information source on our equipment logs and work order requests.

The information above, plus data from T3000 DCS – that produces "raw streaming data on vibrations, temperature, and the humidity of the ore crushed to Data Historian" – will help us identify the most low-cost and least damaged machine. The remainder will reveal what is happening to the other two crushers. One could then take most damaged crushers off-line for study and use only the lowest cost crusher. Then, after all crushers are inspected and repaired, put them back into production per OEM specs. If one or more crushes cannot be saved, sell it for salvage and write it off the books.