Monalco Problem Statement & Context

Monalco is a world leader in iron ore mining. Recently, it has upgraded its ore crushers, and with it also extended higher maintenance costs. At the same time, due to saturated markets and higher world supply, the price of iron ore has dropped, from $110 to $55 per ton, undercutting severely revenues. Monalco's break-even value cost is $50/ton.
It's imperative, management requests, to find solutions of cutting and reducing annual costs of maintenance, to accommodate this untenable situation.

Areas of intervention are:

- Preventing excess wear of ore crushers
- Reduction of the required maintenance orders by 20-30%

Central Question:

How to reduce operational costs by at least 20% for the next year, by reducing manufacturer maintenance events.

Criteria for success

The annual maintenance expenditure must be cut by at least 20%.

Scope of Solution Space

1. Analize, discover and implement best saving practices for equipment operation by reducing at least 20% of manufacturer maintenance events.
2. Particularly, focus should be put on the excess wear of ore crushers, in order to prevent excess maintenance events.
3. Implement a month by month, control system of evidenting working procedures of crushers, comparing them to the actual need for maintenance.
4. Adjust with the new procedural measures to maintain positive results.

Constraints within solution space

- The maintenance events can’t be cut more than the recommended OEM limit of one maintenance event per 50,000 tons of iron ore processed.
- Have in place proof of concept, for circumventing possible disagreements from the engineering team for reliability, regarding the need for reduction of maintenance events. PofC should demonstrate cost advantages of new protocols, without risking efficiency or operations.

Stakeholders providing insights

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    - 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
    - Chris Hui - Team Lead

Data sources

- Data historian: amount of iron processed by the ore crushers.
- Ellipse maintenance database: old work orders for maintenance.
- SAP maintenance database: recent work orders raised for maintenance.