Monalco Problem Statement Shailaja

Problem Statement Worksheet:
How could Monalco Mining bring back annual maintenance expenditure of $30M for iron ore crusher from current $45M,so that it can accommodate market price $50/ton and at the same time meet the current market supply.

Context:
In order to accommodate the spiked price of $110/ton for the iron ore, Monalco purchased the ore-crusher. With the increased market supply price dropped to $55/ton. But Monalco is now spending more money for its maintenance and this is bringing down the business profit for the company.

Constrain within solution space:
There is potential resistance from the reliability engineering team to cutdown maintenance events.

There is a need for one maintenance event for every 50000 tons of iron ore processed.

Criteria for success:
In 2019 Ops and Manufacturing was optimized to reach maintenance expenditure reduction on work orders by 20% in order to increase profit margins, without compromising the quality. And equipment was not used for more than what is expected by the manufacturer thus excess wear was prevented.

Stakeholders to provide key insight:
ChanelAdams – Reliability Engineer
Jonas Richards – AssetIntegrity Manager
BruceBanner – Maintenance SME
Jane Steere - Principal Maintenance
Fargo Williams– Change Manager
Tara Starr - Maintenance SME
Bruce Banner - SME
Tara Starr - SME
Chris Hui - Team Lead

Scope of solution space:
Monalco's Capital Expenditure2(CAPEX)cut will be targeted at Ore Crusher maintenance dept, because for wear and tear of 80% of the company's work requests causing a huge chunk of profit margin being taken.

Since crushers can not be used for longer hours this may lead to fall in market supply.

Can not ask the manufacturer to supply the equipment to accommodate the 'excess wear' or reduce the cost of maintenance.

Key data sources:
1.Data Historian - This includes information on how many tonnes of Iron Ore are being processed with the ore crushers.
2.Ellipse - This includes information on the 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 that have been raised for maintenance work for the ore crushers and other pieces of equipment

Additional systems -

1.T3000 DCS – Sends raw streaming data on vibrations,temperature, and the humidity of the ore crushed to Data Historian
2.Ore Crusher System - This includes a high-level process map outlining how the Ore Crusher works for individual ore crusher models.