CASE STUDY

Maximising NPV for an Iron Ore value chain using Industrial Mathematics

BOLT

The Customer

The client is a leading global mining company with a world class portfolio of mining and processing operations and undeveloped resources. Its portfolio includes one of the world's largest mining projects located in Brazil producing over 15 million tonnes annually.

The Problem

Planning teams are required to produce strategic and tactical plans which align production targets with contracted demand. The client wanted to explore optimisation opportunities across the value chain to ultimately maximise the Net Present Value of the mine. They also wanted to better align production stakeholders to break-down departmental silos and improve organisational collaboration.

The Solution

Polymathian deployed BOLT, a supply chain optimisation decision support tool, resulting in:

- A tactical tool that scopes projections from 3 months up to 1 year in advance to better track sales KPIs
- A strategic tool that produces projections on production over a 5 year period to optimise sales portfolios over the longer term
- A historian tool that tracks stockpile actuals to compare with planned projections over time to validate planning process

The Challenges

Time consuming process requiring manual entry of daily data into Excel to produce a weekly plan (8 hours)

Excel used to produce estimates for stockpile levels and attributes, no visibility over actuals

Without optimisation, just meeting demand by filling vessel quotas

Tracking and optimising supply of four qualities of ore product produced by the beneficiation plant

The Value

BOLT has helped reduce departmental silos by centralising and automating planning efforts. This has resulted in greater visibility of stockpiles to align demand to production as well as make complex blending decisions to optimally fulfil vessel contracts.

10%
Improvement to NPV

Scenarios
Rapid what-if scenario planning now possible

50x
Improvement to planning processes