



Smart Solutions

Case study: Increasing shovel production by 12%

Application: *Surface mining - coal*

Location: *Australia*

Products featured: *P&H 4100 Electric Shovel*

Challenge: Increase machine productivity

The electric shovel was considered to be under-performing when compared to its equivalent peers.

The customer was under pressure to improve its performance so that the material movement targets for the mine could be achieved. They, however, had no budget for the improvement project.



Contributing factors:

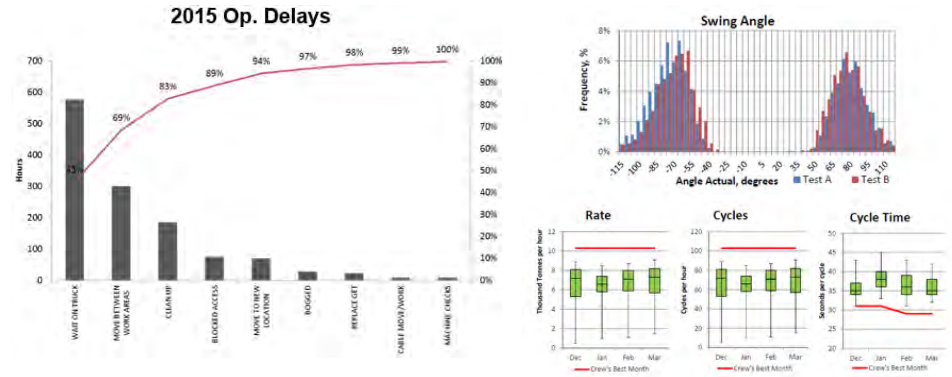
- No data analysis completed to identify root cause
- “Hang time” **and** “truck queue” **opportunity identified**
- Misaligning truck and shovel delays impacted production cycle

Engagement process: Working toward a solution

Data driven analysis of the entire truck shovel system performance.

Seeking input from stakeholders for constraint identification, solution development and implementation programs.

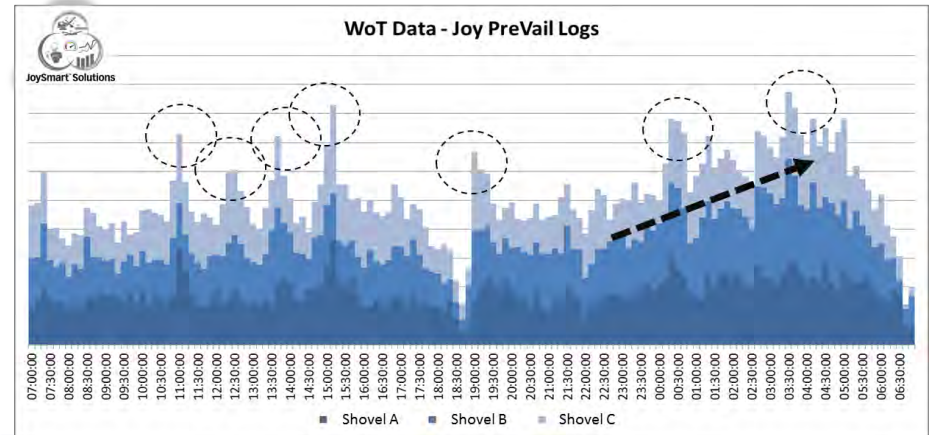
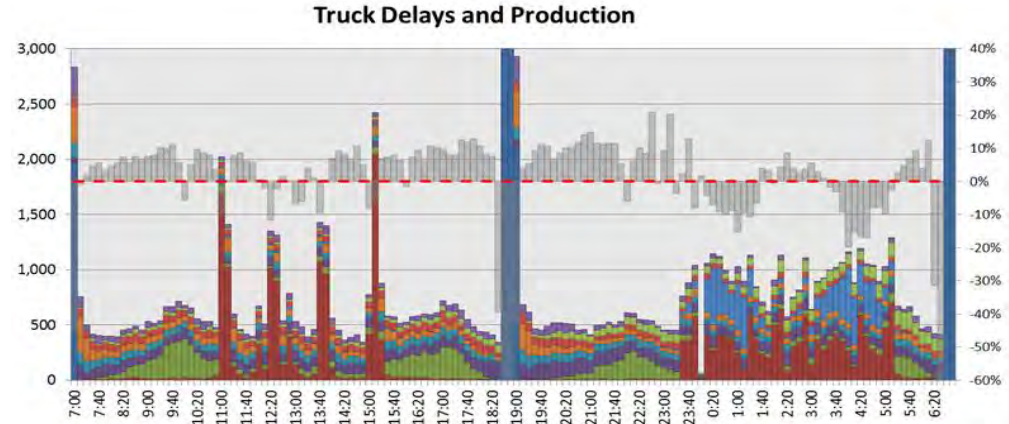
Developing tools for ongoing governance and support to ensure changes made positive impact.



Solution: Understand delays effecting the production cycle

Using data analysis to determine when the shovel consistently experiences **“hang time”** and cross referencing these times with truck fleet delays.

Workshop solutions with customer to identify contributing factors to truck delays and develop delay mitigation tactics.



Results:

- Shovel performance now 12% above baseline
- Project Budget / Spend - \$0
- Positive flow on effect to other loading units at site with substantial value

