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**Load and Haul  
Productivity Improvements  
Case Study**

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# How one coal miner embraced an intelligent mining operating system to move 10% more tonnes of coal and improve site profitability by 8.5% within the first 2 months of deployment.

Looking to improve mine productivity and compliance, a global technology strategy was implemented by one global coal miner who partnered with Decoda to embrace data and analytics to implement a powerful assessment, planning, and execution solution.

Decoda recently worked with a major global coal mine operator to analyse and improve load and haul productivity. This client operates multiple mines globally, moving up to 50 million tonnes of coal globally per annum with annual profits in the billions.

Like many others, this operator was struggling to meet its mine plan and consistently improve productivity across load and haul operations. "Nearly every site has issues with achieving their mine plan, and not knowing why," says Kurt

Pidgeon, Analytics & Technology Manager at Decoda. "They can see they are falling short, but they can't say why it occurred - or what they can do to change it."

To help rectify this, the operator had recently implemented a digital strategy focused on maximising the adoption and utilisation of data and analytics technology across its load and haul operations globally. But despite this, they were still:

**Constrained by siloed data sets**

**Unable to visualise their load & haul operation as a single unit**

**Too focused on individual KPIs and processes**

**Unable to convert data into actionable insights that delivered sustainable productivity improvement**

Aware of the challenges being faced, Decoda reached out to this particular operator to suggest a partnership and implement the newly developed Decoda Load and Haul solution. Upon seeing the capabilities and benefits of the deployed solution on one of their Australian sites, the mine operator asked Decoda to implement it across several of their major international sites as well.

***"We developed a solution with them and found extensive insights - and they immediately recognised the benefits Decoda could bring to their overseas sites."***

***- Kurt Pidgeon***

## A four-step process for sustained performance

For all projects, Decoda undertakes a unique process that doesn't just deliver data analytics results, but an end-to-end consultative service. The process includes four key steps:

- 1 Rapid assessment** – applying the Decoda analytics platform to discover actionable insights and forecasting potential value gains through a 'what if' profitability analysis tool.
- 2 Develop improvement plan** – identifying areas of improvement – whether operational, mechanical, or procedural – and implementing a plan for change.
- 3 Change management execution** – communicating with the people on site regularly to discuss what needs to be done and how it can best work.
- 4 Maintenance & measurement** – embedding and sustaining improvement changes for long term success.

This process removes a lot of the workload and responsibility from staff and increases the likelihood of benefits sticking long term.

## The process at work

Decoda entered the rapid assessment phase with their coal mining client by pulling and analysing multiple data sets from across the operation. Instead of paying attention to individual equipment or truck payloads (which many operators prioritise), Decoda instead focussed on the Load and Haul business unit as a whole.

“It's very easy to say payload on a truck is low and rectify that. But what if that's not the real problem?” Explains Kurt. “We look at the whole business unit's productivity and profitability and how the circuit is operating overall.”

By doing this, Decoda was able to identify some key issues:

- Queue time was 3 times load time, meaning they weren't truck constrained, but load unit constrained

- There was no real pass strategy, with crew strategy varying between three and four passes
- The instantaneous dig rate at four passes was well below average (6400 tonnes p/h), while three pass loads showed a massively improved rate (8200 tonnes p/h)

In this case, Decoda could prove three pass loads would deliver higher productivity and profitability across the load and haul operations.

From here, the Decoda team worked with the onsite planning, production, technical and maintenance teams. This helped them break down the silos that appear on site and address individual pain points to ensure the new strategy could be implemented and sustained.

## Immediate, sustainable outcomes

### 10% improvement in tonnes moved

By reviewing and tweaking pass matching strategy, number of tonnes moved increased by 10%. With the current price of coal, this equals an approximate profit increase of 8.5%.

### 2.8% productivity uplift

Other than identifying pass matching improvements, Decoda's analysis also picked up a problem with TKPH using calculations that were derating the site's trucks. By changing the calculations load and haul productivity increased by 2.8%.

### Sustainability

This operator now has full visibility of their operations and improved data and analytics understanding. They are now better placed to implement their technology strategy and ensure mine compliance and productivity long term.

## Looking to the future

This operator's partnership with Decoda has enabled them to execute load and haul improvements across all of their sites, setting them up to further improve productivity, profitability, and mine plan compliance.

It has also set their global data and analytics strategies in motion, enabling them to harness available data to maximise outcomes across not just individual business units, but the entire mine value chain. It has given them visibility, capability, and knowledge they would otherwise not have been able to access if they had tried to carry out the work internally.

***“Decoda provided added value and allowed them to expand that value through other deployments. They now have more knowledge and visibility of how their site is working - and how it can work better.”***



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