CASE STUDY

Maximising coal velocity through complex mining value chains

RACE

The Customer

The customer is a major coal terminal operator on Australia's east coast. Each year, it receives tens of millions of tonnes of coal by train which it exports to customers around the world.

The Challenges

Every week the customer issues parcel build windows for coal delivery to numerous haulage providers, who in turn service multiple producers. Once the train unloads at dump stations, coal is stacked onto pads then later reclaimed and loaded onto vessels.

While the customer had planning and scheduling support for activities within the terminal, there was limited support for synchronising these activities with coal deliveries. The challenge was to implement a solution that would enable the customer to coordinate complex inbound and outbound activities in order to maximise terminal throughput.

The Solution

The RACE planning module was deployed to the customer, configured specifically for terminal operations, and readily integrated with their existing data systems. The customer already knew about RACE by reputation; Polymathian's purpose-built tool plays an active part in eastern Australia's coal mining value chains. Many of the customer's stakeholders – haulage providers, track owners and producers – use RACE for their own planning and scheduling.

About RACE

RACE is Polymathian's proprietary value chain optimisation tool designed to solve a range of complex rail-based value chain planning and scheduling problems.

The Benefits

Throughput
Maximise terminal throughput

Precision
Time and build parcels to maximise coal velocity

Scenarios
Answer business critical questions

RACE Benefits

Greater throughput

RACE enables the customer to increase throughput through the terminal by simultaneously modelling inbound and outbound operations.

Increased precision

More sophisticated planning ensures the right parcels are built at the right time for maximum coal velocity through the value chain.

Faster, more accurate schedule generation

Schedules that used to take hours to create are now produced in minutes, are of higher quality and have a greater level of detail.

An optimised planning department

As a web-based tool, RACE can be accessed by any authorised user with an internet connection and a computer and can be readily integrated with customer data feeds.

Minimal impact to stakeholders

All improvements occur "behind the scenes"; schedules are presented in a format familiar to both the customer and their stakeholders.

Decision support

RACE produces globally optimal solutions to help answer business critical questions such as:

- Which parcels should be built with what delivery windows to ensure inbound assets and terminal assets are used as efficiently as possible?

- What is the optimal vessel berthing sequence to minimise aggregate vessel turnaround?

- How can we minimise the amount of time between loading one parcel onto a vessel and being able to utilise the vacated stockyard space again?

- What happens if one or more dump stations, stackers, reclaimers or ship-loaders is down for maintenance for a period of time?

- How can we minimise the impact to our terminal when there is major maintenance work on parts of the track network?