OPTURION
Intelligent Decision Support

Dynamic Transport Optimisation - McCarthy Transport

Background

McCarthy Transport is a provider of transport and distribution services to the forestry industry in New Zealand. It operates a network with three hubs (Whanganui, Karioi, and Masterton) and runs a fleet of about 120 trucks to deliver timber from forest locations to sawmills and ports. McCarthy manages the stock levels at the forest locations with minimum and maximum levels.

Opturion was introduced to McCarthy through their TMS provider (CMS Transport Systems, part of WiseTech Global) and Grant Thornton New Zealand to optimise McCarthy's transport operation.

Transport Problem

The transport problem had some distinguishing features:

- Multiple depots at which different parts of the fleet are based.
- Numerous vehicle types with varying capacity
- Access restrictions at sites, i.e. some sites only allow certain vehicle types
- Driver/crew ratings based on experience and performance; there is a minimum driver rating for some sites, e.g. new sites
- A range of volumes that can be or must be transported each day as per the allowable stock levels.

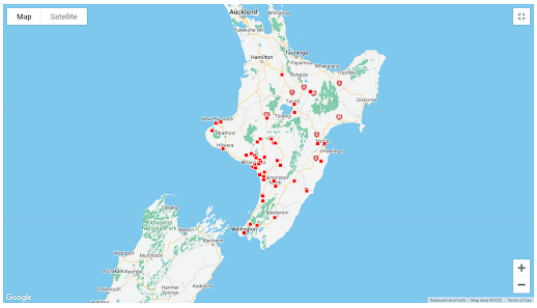
Approach

Opturion's model was built and validated using data consisting of 58 locations, 207 truckloads of volume to be transported, and 124 available driver shifts.

We used the Opturion Dynamic Transport Optimiser (DTO) to complete this task. DTO is a revolutionary approach to support transport decisions such as load planning, routing, and scheduling. It can be applied in the strategic, tactical, and operational contexts to provide decisions that are compliant, provide customer service, and minimise cost.

Solution

The optimiser managed to complete the task using only 75 driver shifts. Because these were all full truckloads, the challenge to the optimiser was to get the maximum usage out of each driver and make sure they do not end up working only part of a day while being unable to do another load.



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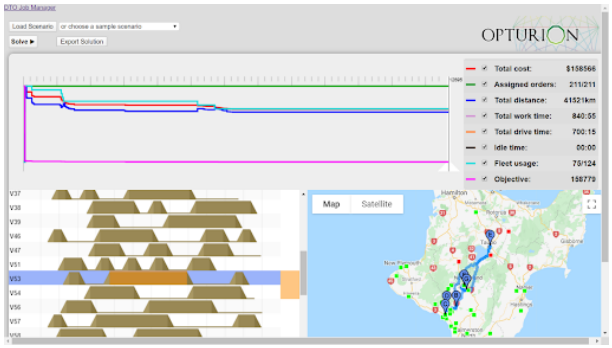
Result

These problems can be very dynamic, with delays occurring due to various factors: traffic, congestion at the endpoints, issues with stock availability, equipment, etc. Therefore, it is important to re-optimise throughout the day based on what is happening. Opturion's DTO can be used in multiple settings. In this case:

- Look ahead planning: looking 3 to 5 days forward to make a tactical plan as to when to collect the product from each site and in what quantity
- Day-ahead planning: based on fleet availability and the tactical plan, creating an initial schedule for drivers for the next day
- Day of operation replanning: reacting to changes between planned and actual (delays, staff or equipment unavailability, or being ahead of schedule)



Customer Outcomes

Opturion's DTO runs behind the scenes in the CMS system, and the customer only interacts with the system. DTO can be used as a standalone as well and has an Excel-based interface as well as a tabular web-based UI.

Further Information

Please contact Opturion for a demonstration, or give us some data that we can use to identify potential benefits.

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