



Dynamic Transport Optimisation - Chemist Warehouse

The Challenge

Glen Cameron Group provides local delivery and linehaul services to Chemist Warehouse, one of Australia's most prominent retail groups. Both parties were interested in the potential for greater efficiency while maintaining compliance and service levels. Glen Cameron has over 100 self-employed drivers servicing CW across Australia for metro and regional deliveries. One of the key challenges during the COVID pandemic was the availability of drivers due to two factors: the home delivery task was increasing rapidly, creating an industry-wide shortage, and COVID was causing havoc with driver absences.



The problem was also further complicated by the operating model, which made that the warehouse started picking and staging before the next day's consignments were finalised, and so an initial preliminary optimisation would take place, followed by a final one that tried to minimise moving consignments between vehicles.

The Solution

To analyse this problem, Opturion configured its Dynamic Transport Optimiser (DTO) to represent the delivery task in Victoria, one of the most populous states and considered representative of other states. This exercise entailed gathering information on loading and unloading times, van capabilities, capacity utilisation, store constraints (such as the maximum feasible vehicle size), working times and time windows (when stores can take deliveries).

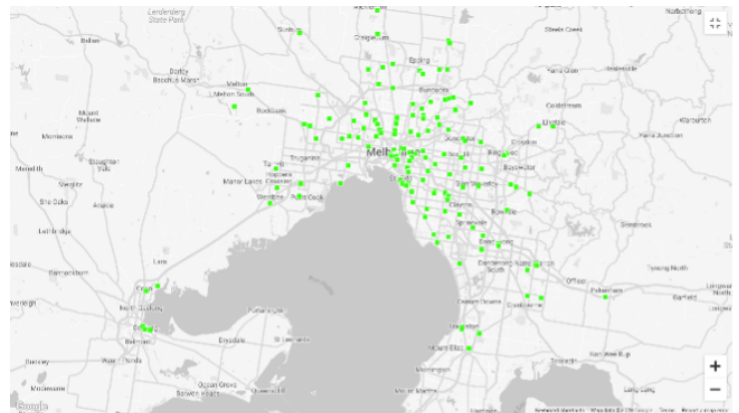


Figure 1 Delivery Locations

Once configured, DTO created plans and schedules to compare with historical plans and actual outcomes.

There were some interesting observations:

- Manual load building was done by allocating key large volume stores to vehicles, and then filling them up by adding nearby stores; this could lead to missed opportunities in terms of how to best utilise vehicle capacity while minimising travel.
- Larger vans were generally allocated to regional routes, even though some metro stores with large deliveries could accommodate them.
- The length of the working day varied significantly between drivers, some finishing early and others working overtime.
- As drivers were paid per hour, it was difficult to get realistic estimates on how much time was required to unload at a store.

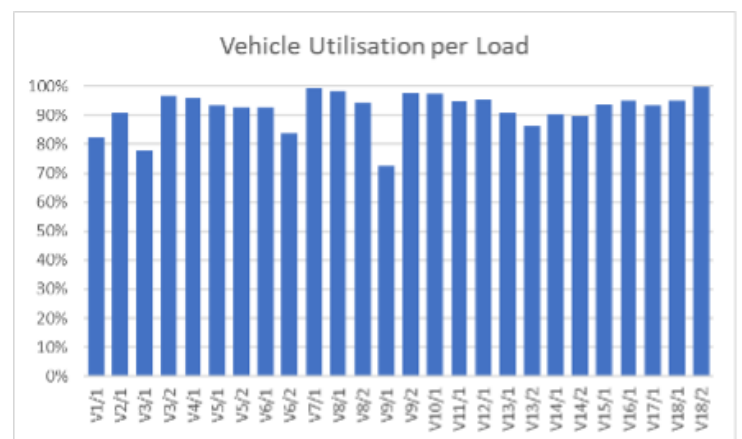


Figure 2 Vehicle Utilisation per Load



Figure 3 Work Time per Vehicle

Potential Benefits

Analysis of the operation showed that productivity gains could be achieved by:

- Routing and scheduling trucks considering loading, driving and unloading times, van capacity and store accessibility simultaneously.
- Scheduling drivers so that their workloads are more evenly distributed and their working hours are more balanced.

Overall, the difference between the DTO and historical plans included:

- The deliveries were possible with about 20% fewer vans.
- The overall working time (and associated costs) were about 7% less.

Next Steps

Chemist Warehouse plans to use the insights gained from this analysis to inform their next delivery contract negotiations.

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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