OPTURION
Next generation optimisation technology

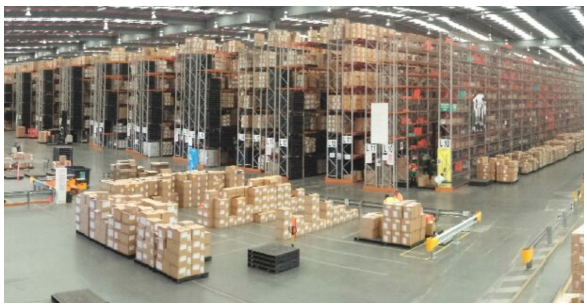
End-to-End Supply Chain Optimisation for Toll - Nike

Background

Toll operates the Nike distribution centre at Altona North in Victoria.The custom built facility measures 18,000 square metres and has receiving, put away, picking and dispatch functionality, and the ability to handle in excess of 24,000 SKUs. Containers arrive from the manufacturing facilities in Asia and are dispatched to stores across Australia.

Toll has implemented many improvements onsite to remove waste and optimise productivity, such as continuous remodelling of the warehouse layout as the business changes, incorporating other Nike brands such as Hurley into the supply chain, upgrading the warehouse management system, changing the picking systems and storage profiles, and re-engineering the receiving processes.

The distribution centre (DC) is now at full capacity, and in 2016 Toll and Opturion commenced a proof-of-concept project to reduce load on the warehouse and thereby increase effective capacity.

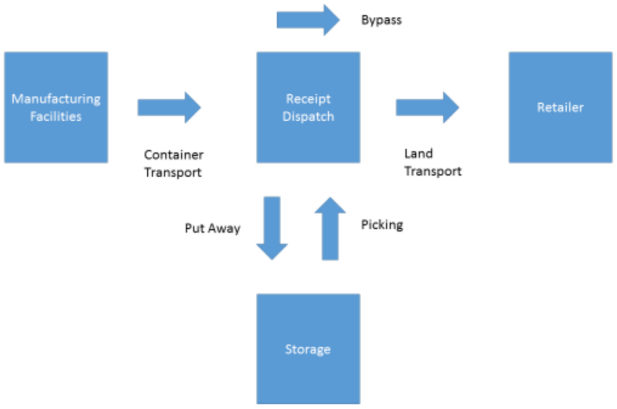


the scope for bypass for any particular item and any particular container. There is also, limited, scope to re-order container arrivals and/or processing order at the DC. There are a number of complications that are typical in any supply chain.

- Nike and Toll, and other actors in the supply chain, uses different software platforms
- Terminology and referencing changes between actors
- There is some uncertainty; orders can be blocked, changed or cancelled
- Any solution must be simple and easy for the shop floor to use

The Solution

The complete solution takes the container arrival and content data to create an optimal order for processing, and identifies the maximum possible bypass opportunities for each container. This is conveyed to the shop floor via a printed list that is checked off as boxes are selected for bypass.



The Result

The system has been tested in a limited number of orders so that change management and risk is minimised. Even so, the system has identified some 5% of orders that can be bypassed, reducing load by 5% and effectively increasing the capacity of the DC by 5%. Given that a new DC could cost around $50M, this represents a capital cost saving of $2.5M. The potential is much higher when more customers are added and the full opportunity of reordering containers is taken.

Potential

This form of end-to-end optimisation has further potential benefits that may well be explored in a follow on project, or series of projects:

- Better co-ordination of container arrivals and customer orders
- Better co-ordination of outbound movements (deliveries to stores)
- Smoothing out workload to reduce the cost of casual labour

These are only now possible because we can link containers information directly to customer orders.

Acknowledgements

Opturion would like to thank the following organisations, without which this project would not have gone ahead:

- The Australian Government Department of Industry, Innovation and Science that supported this project through a commercialisation grant as part of the Entrepreneurs' Programme.
- Toll and Nike for providing the opportunity, facilities and data to address this problem

Customer Perspective

"Toll is always looking for ways to improve productivity and customer service. This project has demonstrated that we can increase capacity without building anything, and it has the potential to go further."

--Rohan Morrow, Toll Custom Solutions