



Logistics Association of Australia Ltd

RE-ENGINEERING A RETAIL SUPPLY CHAIN

Glenn Baird, winner of the 1997 International Study Award, visited North American institution Canadian Tire on his recent overseas study tour. Founded in 1922 by John and Alfred Billes, the company is now a retail giant, with 90% of Canadians no more than a 15 minute drive from a Canadian Tire store. The International Study Award is sponsored by CHEP Australia.

Canadian Tire Corporation, headquartered in Toronto, celebrated 75 years of operation last year. An integral part of Canadian life, it comprises 3 distinct businesses:

- **Canadian Tire Petroleum** (Canada's largest independent petroleum retailer);
- **Canadian Tire Financial Services** credit card services for retail and petroleum customers and support activities for Canadian Tire Retail (loyalty program, auto club, financial products marketing);
- **Canadian Tire Retail.**

Following the CLM conference, I was able to visit the Canadian Tire Retail (CTR) division's operations. CTR comprises 426 stores across Canada. A unique concept in retailing, developed by the Billes brothers, sees CTR stores being operated by "Associates" or dealers. The associate program has similarities to franchising, but operates as follows:

- CTR own the site (land & building);
- Associates are selected to operate the stores and own the business assets and liabilities (shop fittings, stock, manage the employees);
- Canadian Tire corporate office provide management and systems support, purchase and distribute stock to store based on associate orders and co-ordinate marketing and promotional activity;
- Associates are carefully screened prior to being offered a small store. If successful, they may over time be offered larger stores;
- Many Canadian Tire associates have created considerable personal wealth from their dealerships and have made the dealerships highly sought after.

CTR retail stores have a look and feel similar to Kmart or Big W. Ranging includes full automotive parts and tyres. Stores also stock retail leisure goods including sporting equipment, and have a gardening section. Canadians can purchase items as diverse as car exhaust systems, tents, BBQ/Gas stoves, irons, snowshovels, hockey sticks, plants and garden materials and outdoor furniture. Most stores also have automotive servicing bays. The CTR network can be summarised with the following statistics:

- \$4 billion annual sales;
- 2 major distribution centres located in Toronto;
- 20 regional depots;
- 1700 suppliers / 113,000 active SKUS;
- 500 million consumer units per annum;
- 54,000 outbound loads to CTR stores per annum.

In late 1992, a new executive management team were appointed to Canadian Tire. These changes were driven by declining performance within the corporation and an erosion of competitiveness in the marketplace. In 1994, a logistics re-engineering program was launched. Improvements in 4 key parameters were targeted:

- service level to retail stores;
- cycle time (from Canadian Tire Purchase Order to end-consumer);
- inventory turnover multiples;
- total logistics costs (as % of sales).

CTR adopted a process view of its business. This focus led it to identify key processes and re-engineer the processes accordingly.

Assortment planning and promotional planning helped CTR to tighten the available range and better understand the impact of the promotion-sales offtake relationship. Demand fulfilment processes and activities could then be defined to attack the first targeted parameter.

Demand Fulfilment

CTR promote 400-600 items per week in a nationally distributed flyer. Promotional demand lift can be between 5 and 20 times regular demand. Causal forecasting models have been built by CTR to factor in price discount, size of flyer, time in the season, time since last promoted and position in the flyer.

Forecasts are then generated at a dealer, or group of dealer levels, to drive DRP (Distribution Requirements Planning) replenishment suggestions for each of the Distribution Centres (DCs). A planning horizon of 26 weeks is used.

Each CTR dealer (store) has its own IBM A5400 system to operate sales and business systems. CTR plan to evolve their replenishment systems by:

- generating store level forecasts for each item;
- running DRP at store level to suggest store order quantities;
- use these planned orders to project forward demand on regional and central DCs;
- net central requirements off to project order quantities for suppliers.

A 26 week supplier schedule is sent to each supplier. Within an agreed timeframe, these orders are frozen and become firm purchase orders.

CTR have considered the use of store POS data to drive replenishment but have discounted it because dealer order quantities also have to account for forward /investment buying at promotional prices (permitted by CTR) and retail bin capacity constraints on ability to hold stock at store level. In other words, CTR can advise their dealers on store inventory policy but can not mandate it.

Improvements in supplier service levels, own DC service levels and reduced inventory values have been achieved. This experience mirrors that achieved in Australia by Coca-Cola and Nestle Dairy through their use of DRP based replenishment systems.

Warehousing/Transportation Planning

CTR annual outbound transport volumes are very large. Transport planning however can not be achieved without integrating efficient DC operations. The two large central warehouses in Toronto are 1.2 and 1.4 million square feet in capacity. Brampton warehouse is now 25 years old and has had two expansions since it originally opened. The A.J Billes warehouse is about 5 years old.

Each warehouse plays a different role in CTR's distribution system. Brampton focuses on bulk and non conveyable items. Examples include tyres, exhaust systems, furniture and snowshovels/brooms. The warehouse has a mix of automatic (crane) storage and retrieval systems (28 in total), 80,000 pallet locations and additional bulk storage bins. An in-floor towline system (3 miles in total length) is used in Brampton to automatically route trolleys with picks/putaways to and from the warehouse doors.

At A.J. Billes, a mixed system of in-floor towline and conveying systems is used. A.J. Billes is an interesting constraint for CTR. When constructed, it was based on the Brampton model where "store and pick" was the operational imperative.

CTR's needs have evolved to require more flow through and cross-docking volumes in their operation as the projection below illustrates:

Channel	Actual 1993 Cube %	Target 2000 Cube %
Storage	71	46
Flow Through DC	15	30
Cross Dock	0	12
Direct to Store	14	12

Most inwards and outwards goods are handstacked into trailers. This is also the case for McCain Foods in Canada. CTR handstack because:

- there is no uniform item size. Higher trailer utilisation is achieved by filling the trailer as full as possible;
- at CTR stores, receiving docks are not large enough to empty a whole trailer prior to putaway;
- CTR own their own trailer fleet so trailer time utilisation is sacrificed for efficient DC and back of store operations.

The 426 stores serviced are not all uniform in size. This dictates a mix of dedicated and shared trailers. Picking/Shipping therefore has to be scheduled in waves, with one or more stores per door, to maximise DC throughput. Work areas within the DC are defined and capacity constraints are defined in either a cube or picks limit per wave. CTR have an in house Warehouse Management System (WMS) that simulates the forward days work to determine constraints. All store orders are reviewed and a preliminary set of orders/pick sequence is generated by 3pm for the next 24 hours.

CTR are currently piloting what they believe is an enhancement to the WMS. The preliminary orders are passed to the load building and routing software with all other orders in the system. The transport planning system, with the ability to include/exclude orders, then optimises orders/pick sequence from transport perspective. This generally differs from the first cut plan produced by the WMS. Operations planners then interact with the system to finalise the actual order groupings and pick sequence. The expected benefits of higher cube utilisation and optimised routes are \$4 million per annum.

In Store Logistics

CTR have also devoted significant time and resources to improving store level logistics processes. A comprehensive "toolkit" manual describing best practice processes for store activities has been developed, circulated and training sessions provided.

The focus of the manual is in several areas:

- inventory management (integrity) and inventory turns;
- a maximising stock availability to customers by fast replenishment, well ordered back of store inventory storage and efficient receipt of store orders across the inwards dock;
- productivity targets and measuring devices for all materials handling related activities;
- introduction of scanning technology to speed receipts and front of store item replenishment requirements.
- pilot stores implementing the activities have reported the usual benefits of increased logistics focus:
 - increased sales due to fewer stock outs (often because stock can be found to put on front of store shelves);
 - decrease in overall wage costs, with logistics related wages decreasing 33%;

- 37% improvement in receipt unloading and sortation rates.

The opportunity to visit Canadian Tire was educational in many respects. CTR, and Canada generally, face many of the small but widely geographically distributed population issues that Australia faces.

In many respects, CTR are at the same evolution stage as a number of Australian firms - grappling with the introduction of a number of systems (DRP, WMS and load/routing management) to better manage their Supply Chain performance.

As with many of these implementations (and ultimately Change management processes), communication frequency, method and clarity has been a key success factor.

My thanks to **Pat Sinnott**, Divisional Vice President, Logistics and his team for making my visit to Canadian Tire so informative.