

# Loblaw, Canada System Design Case Study

## Supply chain system design: Improving customer experience by focusing on supply chain performance

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Loblaw, Canada

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## 1. Background

Loblaw is the largest Canadian food and pharmacy retailer, with a network of corporate and independently-operated full-service pharmacies and food stores in communities across the country. The company employs approximately 200,000 Canadians and runs the largest fleet of trucks in Canada, making more than one million deliveries distributing goods to over 1,000 stores across a network of 27 distribution centers.<sup>i</sup> The Canadian company emphasizes the importance of the availability of fresh food and high-quality pharmaceuticals on the shelves of their stores to earn and maintain their customers' loyalty. This extensive product availability relies on a transparent and reliable supply chain.



Loblaw operates six independent divisions, including pharmaceuticals, food markets, discount groceries, and emerging markets, extending beyond traditional grocery retail into clothing and financial services, as shown in the figure above.<sup>ii</sup>

This case study focuses on how Loblaw employed an evidence-based decision-making process to identify and improve the efficiencies of their supply chain at their largest distribution center (DC), located in Ajax, Ontario and denoted as a star in the map on the right. This DC distributes fast-moving and temperature-sensitive products such as frozen food, dairy, fruits and vegetables. These commodities are similar to vaccines in that they are expiring products that require a continuously-monitored cold chain.



## 2. Catalyst for Change

In 2006, Loblaw was facing a serious customer service issue, wherein retail stores were stocked out while their major distribution centers were full of inventory. Without products on the shelves, customers looked elsewhere, resulting in lost sales and branding risk. In addition to stock and distribution management issues, Loblaw's suppliers were not being paid on-time, and orders (requisitions) were not placed in a timely manner to meet changing demand. Concurrently, the President of Loblaw resigned and the Chairman of the Board stepped down.

Under new leadership, a team of executives formulated a strategy to elevate its customer service, maintain its quality brand, and better serve its customers, mobilizing the supply chain as the key ingredient to improvement. In their view, Loblaw's supply chain problems were manifest in the following examples:

- Stores' shelves were often empty as products did not arrive in stores on-time.
- The DC would often be out-of-stock of key commodities as suppliers' invoices were not being paid on time.
- Of the products that were in-stock, the DC was holding excess inventory, in some cases holding 30 days' stock while the inventory targets recommend 13 days.

Further, these stock management issues could be traced to order management, human resources, distribution, and information systems, for example:

- Orders were often created manually based on individual judgment, instead of consumption data or forecasts.
- Fragmented shipment plans did not enable managers to be responsive to problems.
- The information technology (IT) systems were not accurate, as data was not refreshed timely to reflect reality, and the IT systems were out-of-date.

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Loblaw realized that improving supply chain management was an essential activity to obtain optimal operational results.

### **3. System Design intervention**

The new executive team started their analysis with an assessment of the on-the-ground operations through a 100-day consultation of interviews and visits to Store Managers and Employees to better understand their knowledge and processes as well as to note their concerns and complaints. Additionally, the executive team consulted with external supply chain experts in order to analyze the collected information and learn from best practices about successful strategies to overcome their supply chain challenges.

Following their assessment and analysis, they introduced an improvement plan under the umbrella of a new strategy to “simplify, innovate and grow”<sup>iii</sup>, which was designed to fix the basics by refocusing the company’s attention on their customer, who is expecting to have safe and quality products available on the store shelf. The system design elements included an upgrade of the IT system, distribution optimization and product segmentation, and improved inventory management through more accurate demand forecasting coupled with timely replenishment.

#### **a) IT system upgrade**

Following the on-the-ground assessment, the executive team prioritized the need to base their improvements on the use accurate data. For the Ajax DC, this required upgrading their IT system in order to be consistent with their national Enterprise Resource Planning (ERP) system, which provided comprehensive supply chain capabilities via a highly responsive system that could help the DC follow rapidly changing market conditions and customer demands. The implementation of the ERP software in their corporate and franchised food stores was completed in 2015, allowing the introduction of “perpetual inventory”, giving supply chain managers real-time visibility to all inventory in their supply chain.

With the enhanced data visibility in place, executives shifted their focus from assessment to improvement. Beginning in 2016, Loblaw began harnessing the data to identify and realize cost- savings, improve the efficiency of their supply chain, and reduce the complexity of running their business, enabling the stores to better serve their beneficiaries: their customers.

#### **b) Distribution Network Optimization and Segmentation**

The existing distribution network was highly fragmented across Loblaw’s various brands. Further, each DC, including Ajax, was responsible for its own planning and scheduling using its own technology systems and transport assets, thus operating independently within the overall network. Harmonization and optimization of distribution across the vast geography and diverse product groups was deemed a relatively quick win.

To harmonize the various technologies used for transport planning, Loblaw implemented a tool called Transport Moving System, or “TMS”. One of this tool’s functions is to support the creation of a distribution plan based on segmentation principles that groups orders together based on specific criteria such as:

- Store size in terms of sale: Large, medium, small
- Geographical area and type: Urban setting or country
- Product class grouping and temperature sensitivity: Frozen, local products such as cheese, fruits, vegetables, dairy & deli, fish and meat
- Minimum order quantity or minimum presentation quantity
- Shipment cubic size and weight

For example, because perishable and frozen products need to be delivered more than once a week to stores, these products could be segmented together. Segmenting the supply chain helped Loblaw create optimal pick-up and delivery routes and delivery schedules and employing multi-temperature-zone trucks that can transport products in three different temperature ranges so as to better utilize available space.

Another important system design element that could be optimized into distribution planning is the incorporation of reverse logistics to address the cost of a truck returning empty to the warehouse. When a truck drives a route, the system optimizes the trip by recommending stops to pick up products from local manufacturers for future distribution, which increases overall efficiency.

### **c) Improved inventory management**

Prior to the system design, the DC would push the orders to stores without knowledge of inventory levels. With the new information system, their logistics managers can view near real-time perpetual inventory, reflecting actual customer demand. Based on a pre-configured set of triggers, an order to the store is automatically placed for delivery from the DC to the store.

## **4. Key Performance Indicators (KPIs)**

In order to measure the Ajax DC performance, and with the new availability of data, the Loblaw’s team routinely monitors relevant supply chain indicators that are tracked weekly and monthly. Tracking these indicators continues to help the DC supply chain managers focus on the areas that require corrective actions before issues become problems.

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A sample of these KPIs is shown in the table below.

Indicator Name	Collection Method	Purpose
% Accuracy of inventory in DC	Report generated by ERP and physical cycle counts	Used to calculate the difference between the virtual versus actual inventory
% Accuracy of inventory in stores	Report generated by ERP and physical cycle counts	Used to calculate the difference between the virtual versus actual inventory
Forecast demand ratio	Report generated by ERP	Used to validate and improve forecasting practices and assumptions
On-time and In-full delivery from manufacturers	Purchase requisitions & orders generated by ERP and physical inspection	Used to validate that the products ordered arrive on-time and at the right quantity from the manufacturers
On-time and In-full delivery to stores	Purchase requisitions & orders generated by ERP and physical inspection	Used to validate that the products ordered arrive on-time and at the right quantity from the DC
Cost of transportation per Kilometer	Report generated by ERP	Used to track the cost of a shipment to a store per kilometer. The cost includes fuel, resources, and the cost of an empty truck returning to the DC

### 5. Results

Following the IT system upgrade/rollout, Loblaw is now able to measure its performance on a daily basis and target improvement where necessary. As indicated in their Annual Report in 2015, Loblaw continues to optimize their network by leveraging this technology system to improve the efficiency of their store networks and supply chain. Introducing the ERP system allowed them to host all supply chain functions on one platform, such as: forecasting, ordering, delivering, managing inventory, and paying invoices to manufacturers, which improved data quality, transaction processing, and decision-making. Loblaw's investment toward their technology infrastructure represented approximately 2% of their annual sales, which is the standard in the retail industry.

Following the implementation of the ERP and TMS, Loblaw is serving its customers with a more efficient and streamlined supply chain, which has improved in-store availability and increased customer satisfaction. Daily cycle counts and quarterly physical counts are now completed on-time with >99% accuracy, and in comparison to the old system design, the new system design requires less inventory with improved customer service. Further, with access to historical sales and perpetual

inventory on-hand, forecast accuracy reached 78% in 2016, which has led to fewer stock imbalances, emergency orders, and stock-outs.

Major suppliers such as Procter & Gamble, Kellogg's and others, can now also have access to the real-time inventory of specific products, which helps provide their suppliers with better information and a more efficient extended supply chain, resulting in improved supplier relations.

## 6. Next Steps

The food and pharmacy retail industry is competitive and in order to lead, companies must invest in innovation, execution, and optimization. Loblaw continues to focus on improving their customer service, studying industry trends, re-evaluating their supply chain design, and adopting best practices. These innovations and their implementation have improved their customer service satisfaction by making sure that they were delivering the right product at the right time, in the right quantity with the right quality, in the right place at the right price.

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<sup>i</sup> <http://www.loblaw.ca/en/about-us.html>

<sup>ii</sup> [http://s1.q4cdn.com/326961052/files/doc\\_financials/2015/LoblawAR2015\\_E\\_se  
dar.pdf](http://s1.q4cdn.com/326961052/files/doc_financials/2015/LoblawAR2015_E_se<br/>dar.pdf)

<sup>iii</sup> [http://s1.q4cdn.com/326961052/files/doc\\_financials/2015/LoblawAR2015\\_E\\_se  
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