

## 8.6: Logistics

Logistics refers to the activities of coordinating and moving resources, particularly inputs into the transformation process, and finished goods out to customers. Originally, the term logistics was from the military and referred to moving troops, equipment and supplies. Managing logistics involves making decisions such as the following:

- Choosing to operate and manage the firm's own transportation, or whether to outsource this activity
- Selecting suppliers that have the capability to ship goods safely and securely within the required time frame
- Choosing the correct mode of transportation and the most effective route
- Negotiating the shipping rate



### Modes of Transportation

There are several modes of transportation available to companies. We discuss them in the following:

#### Trucking

The majority of goods are shipped by truck completely or at some point during the shipping. Trucking is the most flexible of all modes of transportation. Trucking is categorized by “truck-load” (TL) when the entire truck is hired and delivered directly, or “less-than-truckload” (LTL) which generally includes using several orders to increase the utilization of the truck. A serious issue facing Canada at this time is the expected shortage of qualified drivers. Demand for drivers continues to increase every year, and the average age of drivers is increasing. The trucking industry will face challenges to make driving more attractive to entice new workers into trucking jobs.<sup>1</sup>

#### Railroads

Rail can be a very cost effective means of transporting goods that need to travel long distances. Goods in containers, or products that are bulky and heavy are ideal for train transport. Canadian rail ships products including cars, fertilizer, food and beverages, forest products, grain, metals and minerals and petroleum products. Often, large manufacturers locate themselves near rail lines to make for easy shipment of raw material into, and finished goods out of their facilities. Compared to trucking, shipping by rail is very energy efficient, and removes many trucks from congested highways. Canada has a very old and well-established rail system.<sup>2</sup>

#### Airfreight

For goods that are expensive, small and light, air shipping may be a good choice. Air carriers charge by a combination of the weight and size of the shipment. This mode of transport is generally used when speed is more important than cost. Shipping by air is very reliable. Firms may want to consider the environmental impact of regular use of air shipping.

#### Waterway

This is a very common way of shipping goods. The goods that travel by water include chemicals, stone, cement, sugar, coal and other heavy commodities. Millions of containers travel by ship each year. Do you know what goods travel by ship? [Read here.](#)

The Great Lakes St. Lawrence Seaway System is a 3,700 kilometer marine highway that runs between Canada and the United States. Opening in 1959 the seaway is a major trade artery that serves many industries to ship iron ore, coal, limestone, steel, grain

and cement. The cost for shipping by waterways is inexpensive. Most low-cost products are shipped by waterways.<sup>3</sup>

### Pipelines

Crude oil, natural gas and other petroleum products are shipped by pipelines. Once the pipelines are built, the cost per kilometre for shipping is very inexpensive. There is a lot of opposition and concern over new pipelines because of worry over spills and leaks that may contaminate land and waterways.<sup>4</sup>

### Multimodal/Intermodal shipping

This refers to the use of a combination of different types of transportation to move goods from origin to destination. A common example is a combination of truck/ship/train. The goal is to ship the goods as efficiently as possible. The goods are shipped under a single contract with a carrier, and can be easily tracked. It also uses several modes of transportation but also uses a container so that freight does not have to be handled each time it changes modes. Each mode will have a carrier responsible for the shipment. The use of containers increases the security, reduces loss and damage and increases the speed of shipment.

Diagram summarizing various modes of transportation.



#### TRUCKING

- Flexible (truck load vs less than a truck load)
- Drivers in demand
- Creates highway congestion

#### RAILROADS

- Ideal for bulkier products or containers
- Cost effective over distances
- Energy efficient

#### AIR FREIGHT

- Ideal for small and light products
- Prioritizes speed over cost
- Reliable
- Air pollutant



## WATERWAY

- Ideal for low cost, heavy products
- Very common
- Inexpensive



## PIPELINE

- Used for crude oil, gas, petroleum
- Once built very cost effective
- Land and water pollutant



## INTERMODAL

- Uses a combination of modes through a carrier
- Products secured in containers
- Contractual with a single carrier

## References

1. <https://www.conferenceboard.ca/topic...ookieSupport=1> ↵
2. Palmer, B. (2014). Let's make an effort to move more freight by rail and less by road. Trains are more efficient. Retrieved on November 4, 2019, from [https://www.washingtonpost.com/natio...08b\\_story.html](https://www.washingtonpost.com/natio...08b_story.html) ↵
3. The St. Lawrence Seaway Management Corporation. (2019). A Vital Waterway. Retrieved on November 4, 2019, from <http://www.greatlakes-seaway.com/en/...tal/index.html> ↵
4. Green, K., Jackson, T. (2015). Pipelines are the safest way to transport oil and gas. Retrieved on November 4, 2019, from <https://www.fraserinstitute.org/arti...rt-oil-and-gas> ↵

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