CONTRIBUTION OF TRANSPORTATION IN THE SUPPLY CHAIN

Transportation is a major contributor to the economy and a competitive force in business. It is the activity that physically connects the business to its supply chain partners, such as suppliers and customers, and is a major influence on the customer’s satisfaction with the company.

Transportation is among the more vital economic activities for a business. By moving goods from locations where they are sourced to locations where they are demanded, transportation provides the essential service of linking a company to its suppliers and customers.

It is an essential activity in the logistics function, supporting the economic utilities of place and time.

Place utility

Means that customers have product available where they demand it.

Time utility

Suggests that customers have access to product when they demand it.

By working in close collaboration with inventory planners, transportation professionals seek to ensure that the business has product available where and when customers seek it.

Transportation is sometimes to blame for a company's inability to properly serve customers. Late deliveries can be the source of service problems and complaints.

Products might also incur damage while in transit, or warehouse workers might load the wrong items at a shipping location. Such over, short, or damaged (called OS&D) shipments can frustrate customers, too, leading to dissatisfaction and the decision to buy from a competitor for future purchases.

However, when a company performs on time with complete and undamaged deliveries consistently, this can instil customer confidence and gain business for the company.

When a company instils confidence in service performance, it can make customers more reluctant to succumb to competitors’ bids to steal business away through clever promotions and reduced prices.
Transportation can also represent a substantial cost for the business. The cost of transportation can sometimes determine whether a customer transaction results in a profit or a loss for the business, depending on the expense incurred in providing transportation for a customer's order.

Faster modes of transportation generally cost more than slower modes. So although shipping an order overseas by airplane is much faster than transporting by ship, it can cost as much as 20 times more.

Such a cost difference might not justify the use of the faster way of transporting the goods. Supply Chain Managers must therefore carefully consider the cost of transporting goods when determining whether to move product and how to move product in the most economical manner.

**Transportation and Logistics**

Logistics is defined as “that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information from the point of origin to the point of consumption in order to meet customers' requirements.”

Transportation is represented in this expression through the word flow. Transportation provides the flow of inventory from points of origin in the supply chain to destinations, or points of use and consumption.

Most businesses manage both inbound and outbound logistics. Inbound logistics involves the procurement of materials and goods from supplier locations. Outbound logistics involves the distribution of materials and goods to customer locations. Therefore, transportation is necessary on the inbound and outbound sides of the business.

The definition of logistics mentions not only the forward flow and storage of goods, services, and related information, but also the reverse flow.

Inventory sometimes flows in the reverse direction. Reverse logistics refers to “the role of logistics in product returns, source reduction, recycling, materials substitution, reuse of materials, waste disposal, and refurbishing, repair, and remanufacturing.”

So transportation not only delivers material and products to customers, but also moves reusable and recyclable content to companies that can use it. Figure 1-1 shows the forward and reverse flows managed by logistics.
Transportation is only one activity responsible for providing time and place utilities through inbound and outbound logistics.

Logistics also involves forecasting demand, planning inventory, and storing goods as well as delivering them. Optimized logistics performance means that these activities are working closely together so that the customer of the logistics service is satisfied with the service, yet the cost the company incurs is minimized.

This optimal performance requires an understanding of how the various logistical decisions and actions affect service for customers and total cost.

Consider, for instance, that a company seeks to minimize its investment in inventory. The company elects to hold all its inventory in one central warehouse location, for it has been shown that consolidated inventory reduces inventory investment.

Warehousing cost should also be minimized because the company is maintaining only a single facility instead of several locations. Customers located close to the central warehouse will be pleased with this decision because the company must travel only a short distance to deliver items to these nearby customers.

However, customers located farther from the central warehouse are likely to be disappointed. They will ask for faster transportation to reduce the order lead times. This might involve using faster means of transporting the goods, which, as noted, tends to cost more than using slower modes.

In sum, holding inventory in one central location might reduce inventory and warehousing costs, but it will increase transportation costs. The business might also be at risk of losing sales to competitors who can offer shorter and more reliable order lead times.
Supply Chain **strategy** that seeks to **minimize transportation cost** will likely not represent an optimal solution for the company. This might call for shipping orders to customers in large volumes and using slow means of transportation.

Requiring large order quantities and using slow forms of transport are two more ways to disappoint customers and risk losing business to competitors.

So although transportation is usually a sizeable expense for a company, and often the largest expense in the function of logistics, supply chain managers must consider the **interrelationships** among the various **logistical actions** and **costs**.

Trade-offs are often associated with these decisions, and the company's customers are also affected. The recognition of interrelationships among transportation, inventory, warehousing, information exchange, and customer service is the embodiment of a **systems approach**.

The manager seeks to **optimize** the **performance** of the **logistics system** instead of **optimizing a singular element** of the system.