

11.7: Logistics and Its Functions

Learning Objectives

By the end of this section, you will be able to

- Define and describe logistics.
- Explain the functions of logistics.
- Describe logistics information management.
- Describe integrated logistics management.
- Characterize third-party logistics (3PL) providers.

Logistics Defined

An important function of the supply is logistics, which includes all the activities involved in the flow of products from manufacturers to consumers. Logistics comprises planning, organizing, and controlling the movement of raw materials and, ultimately, finished goods from manufacturers to final consumers.

For example, the logistics involved in getting orange juice to consumers includes various activities such as packing and transporting. A coordinated effort between all channel members involved in that process is critical. Next, we explore the functions or purpose of logistics.

Functions of Logistics

Getting products from manufacturers to final consumers requires the coordinated efforts of all channel members. These efforts require an understanding of key activities that must occur as products flow through the marketing channel. The major functions of logistics explored next include warehousing, inventory management, and transportation.

Warehousing involves stocking, maintaining, and controlling products while they await the next step in their journey to the final consumer. Warehousing requires receiving and storing new stock, picking and packing ordered items, and shipping products off to their next destination. Depending on the product, warehousing may also involve maintaining control of the warehouse's temperature to ensure that perishable goods or foods that must be held at a certain temperature don't spoil.

Inventory management is a function that involves identifying the type of inventory and how much a company has on hand at any given time. Managing inventory is a critical logistics function because it ensures that there isn't too much or too little on hand.

Transportation is the physical movement of products by either road, water, or air (see Figure 11.14). Companies must determine which transportation method makes the most sense given the product's nature, the target market's location, and the costs associated with each method. Transportation also involves activities such as the generation of shipping documents, the calculation of delivery time, and the need for additional resources like technology or special equipment. For example, an ice cream manufacturer must ensure that the transportation methods it selects to distribute its products are temperature-controlled to maintain the products' integrity and safety.



Figure 11.14 Shipping containers are used by transportation companies in the distribution channel to move products by ship.
(credit: "LARS MAERSK" by Bernard Spragg.NZ/flickr, Public Domain)

Companies must consider three factors in selecting a mode of transportation. First is the product itself. Products that are hazardous, perishable, or problematic to handle may impact transportation methods. Location is a second factor that can impact the mode of transportation. Companies must consider shipping origin, which is the location from which the product ships. They must also consider the shipping destination, or the location where the product must land. For example, a company transporting products from China to the United States must select transportation methods that allow it to move products over large bodies of water. The third factor impacting transportation methods is any special consideration related to time or urgency. Companies must consider how quickly they need products moved from origin to destination. A variety of transportation methods are available, including trucking, rail, water carriers, air carriers, or some combination of these.

In Table 11.2 different modes of transportation are presented along with their relative speed of delivery, cost, and accessibility. Accessibility means how readily available or convenient the mode of transportation is. For example, trucking is an accessible mode of transportation because of the strong road infrastructure in the United States. Let's compare the different modes of transportation based on these characteristics.

Trucking or road transportation makes the most sense for companies transporting between destinations connected by land. It is highly accessible, meaning that trucking is readily available to companies looking for a low-cost transportation mode.

Rail is a second mode of transportation that is best suited for moving goods in cases where speed of delivery is not urgent and low transportation costs are important. Like rail, water carriers offer an even slower mode of transportation at an even lower cost than

rail, making it a popular mode for moving consumer goods from China to the United States.

For some companies, more than one mode of transportation is needed. Multimodal transportation involves companies using two or more types of transportation to move goods from origin to destination. For example, Apple may use air to ship iPhones to European airports but then trucks to continue the journey in getting iPhones to warehouses or distribution centers and retailers.

Modes of Transportation and Relative Factors

Mode	Speed	Cost	Accessibility
Trucking	Moderate	Low	High
Railroads	Slow	Low	Moderate
Water Carriers	Very slow	Very low	Moderate
Air Carriers	Fast	Very high	Low
Digital	Very fast	Very low	Very High

Table 11.2 Modes of Transportation and Relative Factors

Logistics Information Management

For a supply chain to be effective, manufacturers, suppliers, channel members, and customers need useful logistical information to help them make informed decisions. Logistics information management is the recording and reporting of useful information that channel members can analyze and validate during the process of moving products.

Channel members use a system to access and manage logistics information in real time. This information allows members to develop demand forecasts, where they predict what and how much consumers will demand in the future. This helps them make decisions about how much raw materials and other supplies they need to meet consumer demand.

Integrated Logistics Management

Integrated logistics management means that every element of logistics works cohesively to ensure that products flow efficiently and effectively from manufacturer to final consumer. Companies must first begin by defining the objectives of logistics management. For example, in procuring and distributing agricultural products, the supply chain might collectively set objectives that everyone along the chain commits to. They may, for example, set objectives to minimize costs, meet delivery times 95 percent of the time, and communicate openly and honestly about product availability and product flow consistently and systematically. Or they may strive cohesively to manage inventory more effectively to reduce the possibility of shortage or surplus.

Whatever objectives they set for the supply chain, each member strives to integrate its activities and information with the activities and information of other members to ensure cohesive and synergistic handling of products for the ultimate purpose of meeting the wants and needs of the consumer.

Third-Party Logistics (3PL) Providers

A third-party logistics provider is a company contracted by a channel member to handle one or more of the functional areas of logistics. 3PL providers can be warehouses, distribution centers, or fulfillment centers with expertise in managing certain logistical activities.

The advantages of working with 3PL providers is that logistics is their core competency, it is less expensive to outsource, and they offer flexibility. Owning warehouses and trucking systems requires a great deal of capital. Companies would much rather work with a 3PL provider than assume the financial risk of owning and operating their own transportation and warehousing systems.

Imagine if pet food maker Purina had to purchase its own warehousing and trucking business to store and move its goods all over the United States. It would be very costly and require a large capital commitment. In addition, 3PL providers offer the advantage of strategic location. They often market themselves as located in precisely the right zones that a supply chain needs to reach targeted consumers.

The downside of using 3PL providers is the loss of control. Manufacturers are essentially turning over logistics responsibilities to other companies, who assume control of communication and interaction with suppliers. To combat this, manufacturers should continuously analyze performance metrics and communicate with 3PL providers.

Knowledge Check

It's time to check your knowledge on the concepts presented in this section. Refer to the Answer Key at the end of the book for feedback.

1.

_____ makes the most sense for companies who need to transport products quickly.

- a. Trucking
- b. Air transportation
- c. Rail transportation
- d. Water transportation

2.

_____ is the planning, organizing, and controlling of the movement of raw materials and, ultimately, finished goods to end consumers.

- a. Supply chain management
- b. Logistics
- c. A marketing channel
- d. Transportation

3.

Which of the following best explains the importance and use of logistics information?

- a. Companies use logistics information to sell to other companies that target similar consumers.
- b. Companies use logistics information to market additional products to consumers.
- c. Companies use logistics information to develop demand forecasts, conduct supply planning, and optimize supply chain effectiveness.
- d. Companies rarely use logistics information to guide decision-making.

4.

_____ ensures that every element of logistics as part of the entire supply chain is part of a system that works cohesively to ensure that the wants and needs of final customers are met.

- a. A marketing channel
- b. Information management
- c. Integrated marketing communication
- d. Integrated logistics management

5.

Which of the following explains why companies use third-party logistics (3PL) providers to distribute products?

- a. 3PL providers have the expertise, flexibility, and cost efficiencies that manufacturers do not possess in logistics.
- b. 3PL providers understand how to promote a product more effectively than a company can.
- c. 3PL providers own warehouses to help store and manage inventory.
- d. 3 PL providers own and operate their own transportation system.

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