

Distribution Logistics

9.1 *Concept and Nature of Logistics*

9.2 *Major Logistics Functions*

Physical distribution involves planning, implementing and controlling the physical flow of goods, services and related information from producers to customers at a profit. In fact, physical distribution aims at getting the right product to the right customer in the right place and at the right time. It covers not only outbound logistics, but also inbound logistics and also supply chain management.

Logistics helps the inflow of materials into the manufacturing process. It also helps in distribution of products to consumers through various marketing channels. Hence, logistical support is a must for marketing and manufacturing operations. Materials handling plays an important role in the performance of logistics.

9.1 CONCEPT AND NATURE OF LOGISTICS

Logistics deals with all activities that facilitate product flow from the point of raw material acquisition to the point of final consumption as well as the information flow that set the production in motion for the purpose of providing adequate levels of customer service at a reasonable cost. The scope of logistics is twofold: First, it is the movement of raw materials to the plant which is called physical supply (or materials management) and second, it is the flow of finished products from the plant to the customers, called physical distribution as shown in Fig. 9.1.

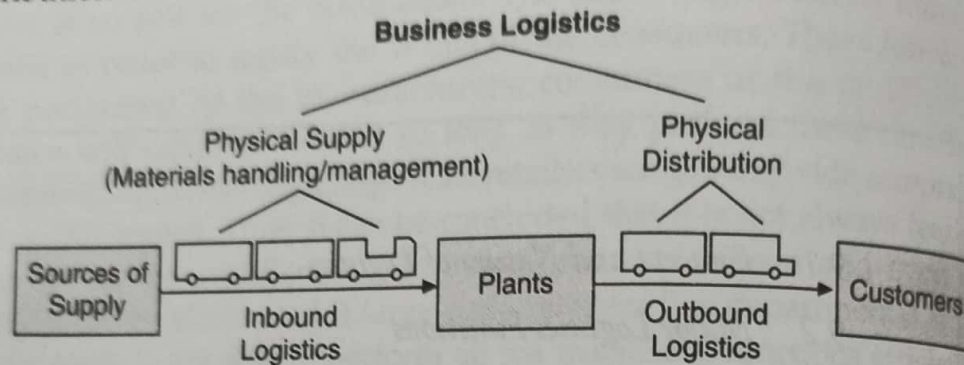


Fig. 9.1. Business Logistics.

Logistics management is the process of strategically managing the movement and storage of materials, parts and finished inventory from the supplier through the firm and on to the customers. It describes the entire process of materials and products moving into, through and out of the company.

Distribution or Marketing Logistics

According to Phillip Kotler, *"Marketing logistics involves planning, implementing and controlling physical flow of materials and final (finished) goods from the point of origin to the point of use of meet customer requirements at a profit."*

The actual work of logistics is supportive in nature. It involves the integration of transportation, inventory, warehousing, materials handling, packaging and information technology. Marketing logistics involves getting **the right product to the right customer in the right place at the right time.**

Physical distribution is concerned with the actual storage of products after their production and before their consumption, and also their transportation to the consumers or actual users. The activities involved in physical distribution, viz., storage (warehousing), transformation and inventory control are performed by the producers and merchant middlemen. These activities must be performed efficiently because of their heavy weightage in the total costs. The costs of physical distribution rank third in the total cost of goods and are exceeded only by costs of raw materials and labour. Economies achieved in physical distribution of goods will go a long way in reducing total costs of goods and increase profits.

Physical supply is basically concerned with materials handling, i.e., procurement of materials, transportation and storage of materials, inventory control, information management, etc. The activities of physical distribution can be grouped under two sub-heads :

(1) Primary activities :

- (i) Transportation
- (ii) Warehousing
- (iii) Order processing
- (iv) Inventory maintenance.

(2) Secondary activities:

- (i) Product packaging
- (ii) Product handling
- (iii) Acquisition
- (iv) Product scheduling
- (v) Information management.

Physical distribution is the process of reaching the product to the customers and it encompasses all the activities in the physical flow of products from producer to customer. It is also called **Supply Chain Management**.

Integrated Logistics Management

The logistics concept is based on a total system view of the material and goods flow activity from the source of supply through production to the final point of consumption. It recognises the interconnections and interrelationships between the multitude of functions involved in this movement from source to users and in doing so, it forces management to think in terms of managing the total system rather than just one part of it.

Logistics management is concerned with the integration and co-ordination of marketing activities in a way that end markets are served in the most effective way. Although managers have used logistics in the military to fine-tune the process of delivery that is time and location specific, there is a lag in the incorporation of military logistics requirements in the civilian sector.

Objectives of Marketing Logistics

The broad objectives of marketing logistics are to ensure flow of materials to the production system and to move products to other channel members and to consumers in the efficient way that is consistent with the level of service that customers require. The other objectives are as follows:

- (i) **To reduce costs.** Costs can be reduced by intelligently by managing the physical distribution system and determining the optimum number and location of warehouses, improving materials handling, increasing stock turnover, using sealed containers to ship products, correcting inefficient procedures in order processing, etc.

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- (ii) **To provide better customer service.** By improving the physical distribution system, the firm's promotional efforts are strengthened so that better sales result could be achieved.
- (iii) **To increase sales.** By ensuring availability of goods and having plans for quick order processing of items, a firm can increase its sales.
- (iv) **To establish competitive advantage.** A firm can acquire advantage over rivals by performing customer services more efficiently—such as arranging for rapid and reliable delivery, avoiding errors in order processing, and delivering undamaged goods.
- (v) **To develop effective communication system.** Logistics management permits salesman to transmit orders on a daily basis and respond to customers' inquiries on a priority basis.

9.2 MAJOR LOGISTICS FUNCTIONS

Network Design

Manufacturing plants, warehouses, materials handling, distribution and after-sale services are typical logistics facilities. Network design is one of the prime responsibilities of logistical management. It is required to determine the number and location of all types of facilities required to perform logistics operations. The selection of a superior locational network can provide the first-step towards competitive advantage. Logistical efficiency directly depends on the proper design of network and infrastructure.

Information System

Two major areas that depend on information are:

- (a) **Sales Forecasting:** Sales forecasting is done to estimate the future requirements of logistics. It helps inventory management to satisfy customer requirements at the right time.
- (b) **Order Management:** Customer's order is very important in logistics. Logistics services are required for external and internal customers. External customers are those that consume the products or services and any trading partners that purchase products or services for resale. Internal customers are organisational units within the company. The more efficient the design of a company's logistical system, the more sensitive it is to information accuracy. Incorrect information and delays in order processing can cripple logistics performance.

Transportation

It helps in the movement of materials for the purpose of production and movement of goods to the customers. There are two fundamental factors in transportation performance:

- (a) **Cost:** It is the payment for movement between two locations and expenses related to administration and maintaining in-transit inventory. Hence, logistical systems should be designed to utilise transportation that minimise total system cost.
- (b) **Speed:** It is the time required to complete a specific movement. Speed and cost of transportation are related in two ways:
 - (i) Faster service with higher rates.
 - (ii) Faster service means shorter time interval. Therefore, balancing of speed and cost factors is essential.

Modes of Transport. There are three types of transport:

- (i) **Land or surface transport.** It includes road transport and railways. Road transport can provide door to door service.
- (ii) **Water transport.** It includes inland water transport through rivers and canals and also sea transport. It is the cheapest means of transport.
- (iii) **Air transport.** Aeroplanes are used for transport of freight. It is a very costly mode of transport and is used to send costly and very essential articles.

SUITABILITY OF DIFFERENT MODES OF TRANSPORT

1. Road transport is most suitable for carrying goods of medium bulk and weight over short distance and for providing point to point service. It is widely used for transporting perishable commodities like vegetables, fruit, milk and milk products.
2. Rail transport is the best means of transport for carrying bulky goods over long distances within the country. Its speed is higher than road and water transport.
3. Water transport is most suitable for bulky goods of low price which can bear handling and hazards of journey and when time is the least consideration.
4. Air transport is most suitable for carrying valuable, perishable and less bulky articles like gold, jewellery, medicines and spare parts where speed is the greatest consideration or where other means of transport cannot reach the particular place.

Warehousing

It involves making of proper arrangements for retaining the goods till they are needed by the consumers. Storage enables goods to be made available to buyers wherever and whenever they are in demand by holding goods in different warehouses situated in different parts of the country. It creates time utility by holding goods from the time they are produced until they are demanded by the consumers.

Functions of a Warehouse. A warehouse may be defined as a place used for the storage or accumulation of goods. Warehousing is a necessary business activity to carry on production and distribution on a large-scale. Warehouses

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help the businessman to keep their stocks in safe custody during lean season. They perform the following functions:

- (i) Creation of time utility.
- (ii) Safe custody of surplus goods.
- (iii) Regular supply of goods.
- (iv) Stabilisation of prices.
- (v) Protection against theft, fire, etc.
- (vi) Packaging, marking, etc.

Materials Handling

Materials handling is undertaken at every stage of logistics activity namely, during production, storage, transport and packaging processes. As we are to look materials handling purely from marketing angle, it stands for the product movement after it gets out from manufacturing plant but before it is loaded on the transport mode to the destination of consumer. Thus, it represents product handling from the plant to the warehouse, product movement within the warehouse and from the warehouse to the place of loading in the transport vehicle and ultimately to the resellers and consumers.

Materials handling is such an important activity that it cannot be avoided in the performance of logistics. Materials handling activities should be minimised as they require a very high capital investment and direct labour cost. The network of facilities forms a structure from which logistical operations are performed within a network design framework as per the requirements of customers.

Materials handling is required for efficient loading and unloading. In warehouse operations, materials handling ensures that products are received, moved, sorted and assembled to meet customers and distributors' requirements. In designing the materials handling, system the following guidelines should be followed:

- (i) Equipment for materials handling and storage should be standardised.
- (ii) The system should be designed to provide maximum continuous product flow as per the requirements of the company.
- (iii) Handling equipment should be properly utilised.

Procurement

It is related to obtaining products and materials from outside suppliers. It performs resource planning, supply sourcing, negotiation, order placement, inbound transportation, receiving and inspection, storage and handling and quality assurance. It is responsible for coordination with suppliers for better scheduling, supply continuity, hedging and speculation, as well as research leading to new sources or programmes. Its main objective is to support manufacturing or resale organisations by providing timely purchase at the lowest total cost.

Inventory Management

It is concerned with the movement and storage of materials and finished products. It starts with the shipment of materials or component parts from a supplier and ends when a manufactured or processed product is delivered to a customer. The logistical process adds value by moving inventory when and where needed. Work-in-process inventory must be moved to support final assembly, thereby it gains value at each step of its transformation into finished inventory.

The main objective in maintaining any inventory is to meet market demands, i.e., to make sales and fulfil customers' orders. Therefore, inventories are kept in anticipation of market demand-preferably based on the sales forecasts. Management also keeps two other considerations in mind, *one* how much inventory would be needed to fulfil the near demand; and *two*, the ability of the distribution system to get the needed inventory in time.

It is always necessary to maintain some inventory of materials, work-in-progress and finished goods for the smooth functioning of the enterprise. It is not feasible to eliminate inventory even though it is considered to be an idle resource. Inventory control requires the maintenance of inventory at an ideal level where the costs of carrying the inventories and the costs of not carrying the inventories are neutralised.

Inventory control is the process of deciding what and how much of various items are to be kept in stock. It also determines the time and quantity of various items to be procured. The basic objective of inventory control is to reduce investment in inventories and ensure that production process does not suffer at the same time. To attain this objective, inventory control must perform the following functions:

- (i) determine items to be stocked;
- (ii) determine when and how much to stock and replenish;
- (iii) keep suitable records; and
- (iv) weed out obsolete items.

Packaging and Labelling

Packaging and labelling are an integral part of logistics. Packaging is concerned with designing and producing of appropriate packages for a product. The significance of packaging has increased these days because of severe competition in the market and rise in the standard of living of the people. Good packaging protects a product on its route from the seller to the buyer and in some cases even during its life with the user. Packaged goods are generally more convenient to handle. Packaging facilitates the sale of a product. It acts as a silent salesman of the manufacturer, particularly at a place where there is widespread use of self-service, automatic vending and other self-selection methods of retail selling. Sometimes, packages are duly sealed to ensure

products of right quality to the consumers. In the absence of sealing, duplicate products may be distributed to the consumers by the unscrupulous dealers.

Labelling means putting identification marks on the package of a product. It may be a part of a package or may be tag attached directly to a product. A label provides information about the brand, grade, price, dates of manufacture and expiry etc.

Order Processing

It comprises the processes that are needed to execute customers' orders quickly, accurately and efficiently. It includes receiving, filling and assembling orders for execution. When customers place an order, they set in motion a flow of products and information that is known as the *order cycle* as shown in Fig. 9.2. Various areas of order cycle are: the seller receives an order, assembles the goods, and despatches them off to the buyer.

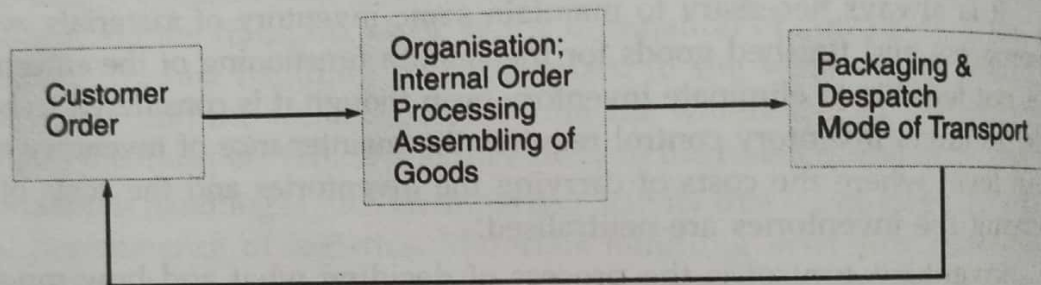


Fig. 9.2. Order Processing Cycle.

The method used by the marketing department for processing customer's orders affects its service to them. Because of delays, buyers tend to shift their orders to suppliers who provide quick deliveries of goods. Therefore, the marketing manager should keep in mind how best to process the orders so that the customers could be retained and repeat orders received. Rapid order processing can enable the organisation to attain economies in other physical distribution areas like inventory, storage and transportation.

Review Questions

1. Explain the scope of logistics management.
2. What do you mean by logistics? What activities does it include?
3. Define logistics management and briefly discuss logistics decisions to be taken by an industrial enterprise.
4. What is meant by marketing logistics? What are its objectives? What are the major logistic functions?
5. What are the major marketing logistics decisions? Briefly explain each of them.
6. Write short notes on the following :
 - (a) Distribution logistics
 - (b) Warehousing
 - (c) Order processing.