

Logistics Management

Introduction

Logistics is concerned with getting products and services where they are needed and when they are desired. In a modern society most if the customers take excellent logistics service from company as granted and tend to notice logistics only when there is a problem.

For Example- Non availability of goods and services which they need very badly, when they visit retail store they expect goods to be in good condition, for ex- fresh fruits, meat, vegetables and the like.

It is difficult to visualize accomplishing any manufacturing and marketing actively, efficiently and effectively without any logistical support. Logistics is a broad far reaching function, having a great impact on the standard of living of a modern society.

What is Logistics Management?

“Logistic is the process of planning, implementing and controlling the efficient, effective flow of goods storage of goods, services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements”

Logistics exists to satisfy customer requirements by facilitating relevant manufacturing and marketing operation. The main responsibility of logistic is the geographical positioning of raw materials, work in process and finished inventories at the lowest possible cost.

Creating logistics value is costly. Logistics accounts for one of the highest costs of doing business. Logistics expenditure normally ranges from 5% to 35% of sales depending on the type of business. Thus logistics even though very important for any business success is expensive.

Types of Logistics

Business Logistics- It is the part of the supply chain process that plans, implements and controls the efficient flow and storage of goods and services from point of origin to point of use or consumption.

Military Logistics- The design and integration of all aspects of support for the operational capability of the military forces and their equipments to ensure readiness, reliability, and efficiency

Event Logistics- The network of activities, facilities and personnel required to organize, schedule and deploy the resources for an event to take place.

Service Logistics- The acquisition, Scheduling, and management of the facilities personnel and material to support and sustain a service operation or business.

Logistics Management - Logistics management is a process of planning, executing, and controlling the efficient, effective, flow and storage of goods and services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirement.

Objectives of Logistics

1. Operating Objectives

In terms of logistical system design and administration, each firm must simultaneously achieve at least six different operational objectives. These operational objectives, which are the primary determinants of logistical performance, include rapid response, minimum variance, minimum inventory, movement consolidation, quality, and life-cycle support. Each objective is briefly discussed.

2. Rapid Response

Rapid response is concerned with a firm's ability to satisfy customer service requirements in a timely manner. Information technology has increased the capability to postpone logistical operations to the latest possible time and then accomplish rapid delivery of required inventory. The result is elimination of excessive inventories traditionally stocked in anticipation of customer requirements.

Rapid response capability shifts operational emphasis from an anticipatory posture based on forecasting and inventory stocking to responding to customer requirements on a shipment-to-shipment basis. Because inventory is typically not moved in a time-based system until customer requirements are known and performance is committed, little tolerance exists for operational deficiencies.

3. Minimum Variance

Variance is any unexpected event that disrupts system performance. Variance may result from any aspect of logistical operations. Delays in expected time of customer order receipt, an unexpected disruption in manufacturing, goods arriving damaged at a customer's location, or delivery to an incorrect location-all result in a time disruption in operations that must be resolved. Potential reduction of variance' relates to both internal and external operations. Operating areas of a logistical system are subject to potential variance.

The traditional solution to accommodating variance was to establish safety stock inventory or use high-cost premium transportation. Such practices, given their expense and associated risk, have been replaced by using information technology to achieve positive logistics Control. To the extent that variances are minimized, logistical productivity improves as a result of economical operations. Thus, a basic objective of overall logistical performance is to minimize variance.

4. Minimum Inventory

The objective of minimum variance involves assess commitment and relative turn velocity. Total commitment is the financial value of inventory deployed throughout the logistical system. Turn velocity involves the rate of inventory usage over time. High turn rates, coupled with inventory availability, means that assets devoted to inventory are being effectively utilized. The objective is to reduce inventory deployment to the lowest level consistent with customer service goals to

achieve the lowest overall total logistics cost. Concepts like zero inventories have become increasingly as managers seek to reduce inventory deployment.

The reality of re-engineering a system is that operational defects do not become apparent until inventories are reduced to their lowest possible level. While the goal of eliminating all inventories is attractive, it is important to remember that inventory can and does facilitate some important benefits in a logistical system.

Inventories can provide improved return on investment when they result in economies of scale in manufacturing or procurement. The objective is to reduce and manage inventory to the lowest possible level while simultaneously achieving desired operating objectives. To achieve the objective of minimum inventory, the logistical system design must control commitment and turn velocity for the entire firm, not merely for each business location.

5. Movement consolidation

One of the most significant logistical costs is transportation. Transportation cost is directly related to the type of product, size of shipment, and distance. Many Logistical systems that feature premium service depend on high-speed, small-shipment transportation. Premium transportation is typically high-cost.

To reduce transportation cost, it is desirable to achieve movement consolidation. As a general rule, the larger the overall shipment and the longer the distance it is transported, the lower the transportation cost per unit. This requires innovative programs to group small shipments for consolidated movement. Such programs must be facilitated by working arrangements that transcend the overall supply chain.

6. Quality improvement

A fifth logistical objective is to seek continuous quality improvement. Total quality management (TQM) has become a major commitment throughout all facets of industry. Overall commitment to TQM is one of the major forces contributing to the logistical renaissance. If a product becomes defective or if service promises are not kept, little, if any, value is added by the logistics. Logistical costs, once expended, cannot be reversed. In fact, when quality fails, the logistical performance typically needs to be reversed and then repeated.

Logistics itself must perform to demanding quality standards. The management challenge of achieving zero defect logistical performance is magnified by the fact that logistical operations typically must be performed across a vast geographical area at all times of the day and night. The quality challenge is magnified by the fact that most logistical work is performed out of a supervisor's vision.

Reworking a customer's order as a result of incorrect shipment or in-transit damage is far more costly than performing it right the first time. Logistics is a prime part of developing and maintaining continuous TQM improvement.

7. Life-Cycle support

The final logistical design objective is life-cycle support. Few items are sold without some guarantee that the product will perform as advertised over a specified period. In some situations, the normal value-added inventory flow toward customers must be reversed. Product recall is a critical competency resulting from increasingly rigid quality standards, product expiration dating and responsibility for hazardous consequences. Return logistics requirements also result from the increasing number of laws prohibiting disposal and encouraging recycling of beverage containers and packaging materials.

The most significant aspect of reverse logistical operations is the need for maximum control when a potential health liability exists (i.e., a contaminated product). In this sense, a recall program is similar to a strategy of maximum customer service that must be executed regardless of cost. Johnson & Johnson's classical response to the Tylenol crisis is an example of turning adversity into advantage.

The operational requirements of reverse logistics range from lowest total cost, such as returning bottles for recycling, to maximum performance solutions for critical recalls. The important point is that sound logistical strategy cannot be formulated without careful review of reverse logistical requirements.

Major Logistic Function

Below is the list of major logistic function, you all must be aware of them all.

1. Order Processing
2. Warehousing
3. Inventory Management
4. Transportation

1. Order Processing

There are many ways of submitting an order like

- By Mail
- By Telephone
- Through Salesperson
- Through Computer and EDI
- In some cases, orders are generated by suppliers for their customers.

When an order has been received, it should be quickly and accurately processed by the organization. When processing is done effectively, both the organization as well as customer is benefited. Now-a-days sophisticated computerized order processing system is used by most of the companies that speeds up the cycle of order, shipping and billing. For example a company named General Electric uses a computer based system in which when a receipt of customer order is received by the system, it checks the credit standing of the customer as well as the identification of the required stock. Then a set of internal orders is generated by the system like an order to ship, an order to bill and a production order, etc all of these systematic activities happen within 15 seconds.

2. Warehousing

Almost every organization is bound to store its products because there is some gap in the production and consumption. An organization must determine about the important aspects of the functions of warehousing like

- How many warehouses are required?
- Which kinds of warehouses are needed?
- The locations of the warehouses, etc.

Warehousing can take the following two forms.

1. a) Storage Warehouses
2. b) Distribution Centers

- **Storage Warehouses:**

Goods can be stored from average to long periods in storage warehouses.

- **Distribution Centers:**

Distribution centers are much more sophisticated in a way that they are involved more in the movement of goods and less in the storage. These distribution centers are highly automated and larger that are designed for the receipt of goods from various suppliers and plants. Orders from customers are received and processed efficiently and quick distribution of the ordered goods is made in these centers.

In modern technological age, new, highly automated warehousing replaces the older warehousing system. In these latest warehousing, effective computerized material handling systems are used that are centralized. There is a very little number of employees working and most of the work is done through computerized machines and robotics.

3. Inventory Management

The inventory is also one of major logistic function in which the effective level of inventory is maintained. The major issue in this function is to keep a complicated balance between carrying less inventory and carry too much of it. Carrying too much inventory is resulted stock obsolescence and higher inventory carrying costs. On the other hand carrying of little inventory results in costly production & emergency shipment, stock outs and finally customer dissatisfaction. So, the management of the organization makes an effective inventory decision by comparing the inventory carrying costs with the generating sales and profits.

In recent years new Inventory Management System has replaced the old high cost incurring methods. Just-in-Time is one of the effective inventory systems in which the level of inventory maintained is kept at a very low level. The inventory has been ordered just after receiving of sales order from customers. The inventory is arriving quickly and the resulting sales order is effectively completed by the organization. In this way inventory maintenance cost is reduced, resulting in the profit increase. This JIT system is effectively used in Japan.

4. Transportation

Major logistic function also include the transportation in which certain decisions about the transportation of goods are made in the light of the interests of the organization. Transportation function is important because it affects the delivery performance, pricing of product, and condition of the arrived goods etc. This would ultimately affection the satisfaction of the customers.

There are five different transportation modes that can be adopted by the organization in the delivery of their products to the dealers, warehouses and customers. These five modes of transportation are as follows.

01- Rail

02- Truck

03- Pipeline

04- Air

05- Water (Shipping)

- **Rail**

The largest carrier of any nation is the railways that deal with the delivery of 26% of total cargo ton miles. Large amounts of bulk product can be delivered to the distant locations in a cost effective way through railway transportation mode like sand, coal, farm and forest items and mineral etc. In recent years certain amendments are made in the railway systems for the effective transportation of goods from one place to another like

- To carry truck trailers by rails, special flat cars are provided.
- Provision of in-transit services etc.
- **Trucks**

In recent years in the transportation mode of trucks has played a significant role in transportation of goods from one place to another with a share of 24% of total cargo ton miles. Within cities transportation, trucks are considered as the largest transportation mode. The routing and timing schedules of trucks are highly flexible and their service is much faster than railways. High value goods of short hauls are effectively transported through trucks.

- **Pipelines**

For the shipment of petroleum, chemicals and natural gas from source markets, specialized means of transportation is used which is called pipelines. Pipelines are mostly used by the owners for the delivery of their own products.

- **Air**

The air mode of transportation is the least popular among the business organizations and only about 1% of the total cargo is transported through the means of air. But still, in this mode of transportation is becoming very popular. The cost of air transportation is much higher due to high freight rates, but it is the quickest mode of transporting products, especially perishable goods and smaller quantity of highly valuable products.

- **Shipping (Water)**

Shipping is the oldest mode of transporting goods from one region to another, but it is time consuming transportation than other modes. Shipping used together with the other mode of transportation. Following are some of the combinations of intermodal transportation.

References

Google.com

Pdfclass.com

Wikipedia.org

Studymafia.org

www.studymafia.org