



LOGISTICS ROLE IN THE ECONOMY

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Abstract *By applying the methods of management of the movement of goods, logistics facilitates in getting products and services as and when they are needed and desired to the customer. It also helps in economic transactions, serving as a major enabler of growth of trade and commerce in an economy.*

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Logistics, economy, trends, development, strategy, costs

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Introduction

The scope and influence of logistics has evolved in the late 1940s. In the 1950s, and 60s, military was the only organization which used logistics. The scope of logistics has been extended beyond the army, as it has been recognized as one of the important tools for developing competitiveness. Competitive advantage means the company has the ability to differentiate itself, in the customer's perception, while operating at a lower cost and greater profit.

Following with the development of mass production and distribution of goods, logistics has come to be recognized as a distinct function with the rise of mass production systems. Production and distribution were earlier viewed as a sequential chain of extremely specialized activities. The role of logistics is to ensure availability of all the required materials before every step in this chain. Obviously inventory of raw materials, semi-finished and finished goods is a must across this chain to ensure its smooth functioning.

The concept of logistics has its systems based upon the approach of the activities of a company. There is a single chain, with flow of materials starting from the supplier, then to the plant and finally to the end customer, and also these activities are done sequentially in order to achieve customer satisfaction at low cost. For this to be successful there has to be co-ordination in the activities of the department.

With reference to an organization, an organization gets a concrete shape due to its structure. In the earlier times, the suppliers in distribution activities were spread across the entire structure, thus resulting in an overlapping of activities and finally in unaccountable authority and responsibility. In today's

process driven organization, where the focus has shifted from functions to process, logistics has become an essential part of the process.

1. Factors that influenced the development of logistics

The increase in time and especially in recent decades of the importance given to logistics in the economy in general and in the functioning of companies and ensuring a higher efficiency in particular was and is determined by a number of factors such as (1) the cost of transport, (2) technical limitations in production, (3) inventory management, (4) diversification of assets, (5) the volume of information, (6) the role of computers and (7) the transition to quality management.

Transport costs (1) grew at a fast pace. More costly methods of distribution were applied and on the one hand the price of oil. Higher costs of transport mean increasing difficulties in ensuring the desired efficiency hence the need to find new ways to reduce operating costs of firms.

Technological limitations in production (2) restrict the possibilities of lowering production costs. By improving manufacturing technologies in the outdated context of mass production, the so-called economies of scale were obtained and relative costs were reduced. But the current trend in the economy is to produce on a small scale, while in areas where mass production is still a solution; there are not much reserves for a profit increase by improving the manufacturing process. Instead, it was observed that distribution offers great opportunities to achieve costs reductions.

Inventory management experienced significant changes (3) due to smaller inventories held by retailers

in the supply chain. These changes regards the (a) range of products, (b) the volume of data and information, (c) the role of computers, (d) the use of "total quality management" and (e) the concerns regarding the environment.

The range of products registers a constant renewal and diversification trend (a). Consumer and traders demands increased, product life cycle shortened, new sources of superior raw materials from different points of view (quality, consumption, cost) were discovered, manufacturing technologies were improved and some new ones were discovered, competition and marketing roles increased.

The volume of data and information on the physical flow of goods increased (b). As a result, a superior organization and coordination of flows of information in this area is required.

The role of computers in logistics increased (c). Organizing and managing information flows is done mostly using electronic means, both within the same company and between it and the companies in upstream or downstream supply chain. In this way large volumes of data can be analysed and effective and efficient decisions can be taken, saving time and costs through an increased possibility of reducing the necessary inventory.

The use on a larger scale of the "total quality management" (TQM) concept has led to significant changes in logistics (d). The idea of "zero defects" was broadened. It is clear that logistics systems must be redesigned to allow for the satisfaction of various customers' expectations.

Concerns regarding the protection of the environment were intensified (e). The concerns regarding the environmental requirements cannot be seen as outside the scope of modern logistics, as this area is one in which most interactions between the firm and the natural environment appear, interactions that can have a positive or negative influence, on a case by case basis.

2. Evolution and definition of logistics

Logistics activities were completely separate before 1950. After the introduction of full cost analysis, new planning models were developed especially for distribution. By the late 50s concepts such as production control, materials management, physical distribution were introduced.

The period between the 1960 and 1970, was marked by the development of improved varieties of products and services, logistics covered only distribution, demand for materials and inventory control issues. As a result, there *business logistics* concept defined (Radu, Specialistul în logistică 2013, 16) as

the management of all activities that facilitate movement and coordination of supply and demand in the creation of time and place utility of the products to customers.

Logistics is thus defined as a management tool. Coordination of supply and demand, in terms of time and place, was seen as an umbrella for logistics activities, respectively as an improvement of logistics concept with this new information.

The period between the 1970 and 1980 brought changes in the cost structure. They increased for most companies, mainly due to the transition from economic growth to one of stagflation (stagnation combined with inflation). During this same period, the development of computers has seen a great momentum. As a result, in the Scandinavian countries was first proposed the concept of logistics management of materials defined as (Radu, Specialistul în logistică 2013, 17) *the activities that develop, plan, organize, coordinate and control the material flow from raw materials up to the final consumer.*

Computer revolution in the years 1980-1990 had an important influence in logistics. There appeared and were widely applied systems like MRP (Material Requirements Blanning) and JIT (Just In Time), even in small firms across the world. As a result, in 1986, logistics were considered as *the planning, implementation and efficient flow control and inventory of raw materials management, of finished products and information from point of origin to point of consumption in order to comply with the requirements of consumer.* Concepts such as competition and strategy have become important for logistics since the 1990s, when the strategy was considered the most important aspect of logistics research.

In summary, logistics concept has evolved as a consequence of the economic environment changes, over time, following a number of significant directions of development of industry and logistics.

3. The objectives of logistics

The main economic objectives of logistics are (1) the reduction of inventory, (2) the economy of freight, (3) obtaining an maintaining reliability and consistency in delivery performance, (4) insuring minimum damage to products and (5) a quicker and faster response to customers' demands.

Regarding *the reduction of inventory* (1), inventory is considered one of the key factors, which can affect the profit of an enterprise to a great extent. In the traditional system, finns had to carry lot of inventory for satisfying the customer and to ensure excellent customer service. But, when funds are blocked in

inventory, they cannot be used for other productive purposes. These costs will drain the enterprise's profit. Logistics helps in maintaining inventory at the lowest level, and thus achieving the customer goal. This is done through small, but frequent supplies.

Regarding *the economy of freight* (2) freight is a major source of cost in logistics. This can be reduced by following measures like selecting the proper mode of transport, consolidation of freight, route planning, long distance shipments etc.

Regarding *the reliability and consistency in delivery performance* (3) materials required by the customer must be delivered on time, not ahead of the schedule or behind the schedule. Proper planning of the transportation modes, with availability of inventory should ensure this.

Regarding *the minimum damage to products* (4) sometimes products may be damaged due to improper packing, frequent handling of consignment, and other reasons. This damage adds to the logistics cost. The use of proper logistical packaging, mechanized material handling equipment, etc will reduce this damage.

Finally, regarding *the quicker and faster response* (5) a firm must have the capability to extend service to the customer in the shortest time frame. By utilizing the latest technologies in processing information and communication will improve the decision making, and thus enable the enterprise to be flexible enough so that the firm can fulfill customer requirements, in the shortest possible time frame.

4. The various functions of logistics

The main economic functions of logistics are (1) order processing, (2) inventory planning and management, (3) warehousing, (4) transportation and (5) packaging.

Regarding *order processing* (1) processing the orders received from the customers is a very important activity by itself and also one that consumes a lot of time and paperwork. It involves steps like checking the order for any deviations in the agreed or negotiated terms, price, payment and delivery terms, checking if the materials is available in stock, producing and scheduling the material for shortages, and also giving acknowledgement to the owner, by indicating any deviations.

Regarding *inventory planning and management* (2) planning the inventory can help an organization to maintain an optimal level of inventory which will also help in satisfying the customer. Activities like inventory forecasting, engineering the order quantity, optimization the level of service, proper deployment of inventory etc. are involved in this.

Regarding *warehousing* (3) it serves as the place where the finished goods are stored before they are sold to the final customers. This is a major cost source and improper warehouse management can create major logistics problems.

Regarding *transportation* (4) it helps in physical movement of the goods to the customers. This is done through various means like rail, road, air, sea etc.

Regarding *packaging* (5) it is a critical element in the physical distribution of the product, which also influences the efficiency of the logistical system and the supply chain.

5. Value delivery in the supply chain

The world has become a global village where due to liberalization and globalization, business organizations are forced to supply products beyond their national boundaries. Thus in such situations, the role of logistics is to provide time and place utility of the products to customers. Also businesses are striving to attain competitiveness. In their struggle to survive, their focus has shifted to supply chain, and to deliver value for money for their customers. Logistics plays an important role in the process of delivering value and how successful the supply chain management is greatly depends on logistics planning and support.

Nowadays, the main trend in logistics is to outsource. Organizations continue to outsource their operations and functional areas to experts who can do this job at a lower cost. Thus, outsourcing can be considered as a main way of adding and delivering value.

Logistics delivers value to the customer through (a) inbound logistics, (b) process logistics and (c) outbound logistics.

Inbound logistics (a) are the operations, which precede manufacturing. They include the movement of raw materials, and components for processing from suppliers.

Process logistics (b) are the operations, which are directly related to processing. They include activities like storage and movement of raw materials, components within the manufacturing premises.

Outbound logistics (c) are the operations, which follow the production process. They include activities like warehousing, transportation, and inventory management of finished goods.

6. Logistics Solution

Generally, the in-house logistics departments in manufacturing organizations take care of all aspects of logistics. But this is not an area of core competency of manufacturing or trading organizations. Today, a lot of successful business corporations across the world

are outsourcing logistics to the third party logistics providers, who are having the necessary infrastructure and expertise to do the job in a better manner. Complete logistics solutions to manufacturers and traders is provided by the third party logistics providers, and they help in integrating various logistics operations, thus ensuring speedy and uniform movement of materials across the supply chain.

Logistics is nowadays widely used in virtually every area. The success of a logistics service providing company depends on how they conceptualize and implement the logistics solution, and also tune to the requirements of the customer.

7. Conclusions

Regarding the *future of logistics*, nowadays corporations look only for sustainable competitive advantage, not only for growth, but also to survive. There is so much competition on the markets, that corporations are compelled to review their business process while they deliver the products and services to customers, who are looking for more and more value for the money that they are spending. The focus of competition has shifted from the product to the supply chain. Today, logistics management is based on the system concept and total cost approach. Transportation, warehousing, handling of material, inventory management and order processing are the major logistics activities which impact the customer cost and operation. Integrated logistics helps in reducing the cost of the supply chain operations and also enhance the customer service level.

When looking at the macro level, a growth of a country's economy depends on the availability of excellent logistics infrastructure. The speed of the movement of goods depends to a great extent on the various modes of transportation like rail, road, air, and sea.

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