

LOGISTICS: VIEWS AND DEFINITIONS



Lgistiek – wat is dit? 'n Nuwe konsep of slegs 'n nuwe woord vir bestaande idees? In hierdie artikel poog die skrywers om verskillende definisies oor Logistiek saam te vat en daaruit hul eie definisie voor te stel. 'n Kort oorsig word ook gegee van die ontwikkeling en ontstaan van Logistiek.



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1. INTRODUCTION

In recent years much has been written about the concept of 'logistics' without giving a clear description of its meaning and value in the normal operation of an organisation. Unfortunately the word has acquired different meanings in the different firms within an industry, and also among the various industries, as well as in the public sector (especially in the military environment) and the private sector. The problem may be confined to an even narrower field, i.e. the functional divisions within a firm may interpret logistics differently. The purchaser and the marketer of a production organisation may interpret logistics in the context of their particular tasks and may differ from one another about the meaning of this concept.

This phenomenon is quite natural and acceptable provided that a general definition is developed which can be used as a reference framework within which the individual firm may determine its own use and understanding of logistics.

This article is aimed at identifying the confusion that exists in respect of this concept, and to provide a definition of logistics according to which each organisation may define the concept with reference to its own operations.

2. THE MEANING OF THE WORD LOGISTICS

Before trying to frame a general definition of logistics it is necessary to compare the different meanings language experts attach to the word. The Shorter Oxford Dictionary defines logistics as:

"The art of moving and quartering troops (i.e. quarter-master's work) now especially of organizing supplies".³

Funk and Wagnals Standard Dictionary provides the following definition:

"The branch of military science that embraces the details of moving, evacuating and supplying armies".⁴

The definition in Webster's dictionary is similar to the abovementioned definitions, but gives a much more comprehensive description:

"Military science in its planning and handling and implementation of personnel (as in classification, movement, evacuation) and material (as in production, distribution, maintenance) and facilities (as in construction, operation, distribution) and other related factors".⁵

As described above it seems as if the concept of logistics applies only to the military environment. This is true in the sense that logistics is of military origin, but in the course of time it expanded to embrace the industrial environment as well. In the industrial environment authors defined synonyms which were accorded the meaning of logistics by various authorities. These synonyms include: marketing logistics, physical distribution, industrial logistics, material management, "rhocrematics", physical supply, total distribution, logistics of distribution, and industrial logistics.

Each of these terms is in actual fact a subsystem of the total logistical system. The objective of this article is to define the total system of logistics, with reference to which each of the subsystems may be defined.

3. THE ORIGIN OF LOGISTICS

The second world war may be regarded as the birth of logistics, and the period before the war as the embryonic stage of development of the concept. Logistics is therefore an old concept which has been revived. In fact, the concept was known in Biblical times, for example where Joseph makes provision during the seven years of prosperity for the period of

famine which was to follow. This act of making provision for the Egyptian nation was in essence the application of logistics, and falls within the general definition of the concept, which will be expounded at a later stage.

Logistics was given its actual foundation during the second world war when the Americans experienced difficulties in supporting their forces in the field. This problem forced them to give urgent attention to logistic support. They felt that logistic support should form an integral part of the strategic and tactical planning of an army. This idea was adopted by the private sector in the course of time and it was found that the same principles applied to both sectors.

Before the advent of industrialisation in America the USA had an agricultural economy in which production was of a seasonal nature. The logistic or physical distribution problem concerned the large amounts of perishable goods which had to be transported and stored. Currently the problem concerns the fact that the USA has developed a mass production economy. The physical distribution problem is now characterised by the physical characteristics of the product and the satisfaction of the consumer's needs. Coordination of activities has become essential to ensure cost effectiveness.

Most organisations' location with reference to the market is of historical origin. The geographic location of firms founded before the second world war is the result of factors which were of importance at the time. However, environmental factors have changed to such an extent that factors that were important then are no longer valid.⁶ The obvious solution would be for a firm to move to a more competitive environment, but this is also not always possible as it would cause the firm considerable problems with regard to personnel and financial matters which, in turn, may lead to ineffective utilisation of resources.

4. THE DEVELOPMENT AFTER THE SECOND WORLD WAR

Two factors in particular contributed to the renewed interest in logistics and may be summarised as follows:

- (a) During the period after the second world war, and especially in the past two decades, electronic computers have shown considerable commercial possibilities and have enabled firms to provide services which would otherwise have been impossible. The practical application of computers and the development and refinement of quantitative techniques have caused emphasis to fall on physical distribution problems. Although the basic techniques did exist the use of computers made optimal solutions to logistic problems possible.
- (b) Technological changes and development at various fronts forced the organisation to adjust to

changed circumstances. This phenomenon was particularly noticeable with aspects such as transport, packaging, communication, location of facilities, and storage methods.

Increasing competition between organisations in the same industry forced the organisation to adopt a competitive cost structure. Bowersox maintains that the distribution costs of an organisation ranges between 5–50% of gross sales.⁷ If the organisation is therefore forced to remain competitive and to finance savings from its own funds, physical distribution will be an area in which considerable savings can be achieved. The competitive cost structure can only be controlled if the entire logistic support system is taken into reconsideration. This implies a systems approach in which the optimal cost structure is not necessarily the minimum cost of a specific element or activity in logistics. A further result may be a reorganisation of functions and responsibilities. Complete integration of activities will require full cooperation from top management who, in view of their position in the organisation, are responsible for identifying and implementing logistics in order to bring about the desired integration of activities. Top management is also responsible for establishing acceptable compromises should the integration of activities cause conflict between the various functional managers.

5. VIEWS HELD BY DIFFERENT AUTHORS

In this section attention will be given to the views held by various authors who are regarded as experts in the field of logistics.

There are various definitions of logistics, physical distribution, material management, etc. Most writers agree that logistics imply at least the flow of a product from the time it leaves the production floor until it reaches the consumer. This part of the definition may include activities such as transport, handling of material, location of factories, location of warehouses, packaging, inventory control, service to clients, order processing, market forecasting, handling of inventory, shipping, movement, and communication. Some writers regard the acquisition procedure as part of the logistic support problem. Activities which would in this case become part of the logistic system include suppliers analysis, inward transportation, purchase procedure, receipts, storage, inventory policy with regard to resources, technology, and scheduling. In this case control is exercised over the flow of the product from the time the need for the acquisition of a resource or part arises until it is received in the form of inventory and is ready to be used by the production or processing division of the organisation.

Another aspect which is emphasised by some authors is the time and place utilisation dimension of logistics. This means that the movement or flow of a product must be controlled so as to ensure that the right product arrives at the right place at the right time. This

systems function, and a work function. All logistic functions may therefore be classified under any of these main functions. The only exception is the distribution channel, which, although not explicitly mentioned, forms part of the socio-economic function and is therefore indirectly included.

6. CONCLUSION

It is clear from the above that there is no uniformity with regard to the real meaning of the concept of logistics. The authors would like to suggest the following definition of business logistics, based on the definitions quoted in the above discussions:

"Business logistics is the management, i.e. the planning, organisation and control, of the execution of all activities related to the move/store characteristics of goods, from the time the need for the purchase of a resource and/or part arises until the organisation receives it in the form of inventory. The term also implies the management of intermediate inventory in the organisation until received in the form of finished products, and the distribution of the products in a distribution channel until it is delivered to the consumer, as well as service rendered to clients, which may, among other things, include maintenance, and is subject to the time and place utilisation of the goods within the framework of the overall objectives of the organisation".²⁰

Activities which are relevant in this context include: transport, inventory policy, location of facilities, information and communication, forecasting, purchases and acquisition, material management, scheduling, order processing, service, maintenance, container packaging, storage, handling, provision, item identification, personnel, training, and the distribution channel.

This definition embraces the whole spectrum of a logistical system and the individual organisation is now able to define its own logistical system to fall within this framework and, at the same time, to comply with the objectives of the organisation itself.

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