

# MANAGEMENT OF TRANSPORTATION<sup>1</sup>

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**Abstract:** Transport is one of the major components of the logistics system, due to its contribution to the mission of logistics. The overall objective of transport is the physical movement of people and goods between two points.

The main objective of the transport is moving the product from departure point of origin to the destination while minimizing time, financial and environmental costs requirements together with customers regarding the quality of goods and services delivery.

Providing technical vehicles the represents all measures and activities that are planned, organized and executed in a unitary structure within an institution (organization)

The management must ensure the vehicle technical to ensure a uniform, continuous, firm, and it must be conducted with appropriate direction.

The originality and value of this study comes from suggestions that are made regarding the concepts and methods that could help improve logistics activities by efficiency transport.

**JEL classification: L90, M21**

**Keywords: logistics, transportation, physical distribution, goods, procurement**

<sup>1</sup> This work was co-financed from the European Social Fund through Sectoral Operational Program Human Resources Development 2007-2013, project number POSDRU/159/1.5/S/140863, Competitive Researchers in Europe in the Field of Humanities and Socio-Economic Sciences. A Multi-regional Research Network

## 1. INTRODUCTION

Logistics activities are all aimed at making available at the lowest price, a quantity of a product at the right time and place for the successful performance of assigned missions of institutions. Until recently, little has been written about logistics because logistical problems had required audience. They reach beyond the public interest and not imposed from outside the vital curiosity of the readers of specialists. This is because the "logistics", although considered a branch of military science was not defined in all its complexity.

After logistics has entered its rights, and the composition of all departments that they came out all technical assurance and material, it must be treated in all seriousness. Without logistics we cannot think even of the initiation of an action more or less large, not only in defense and public order system, but also in key sectors of society.

Transport is one of the major components of the logistics system and is defined as the physical movement of people and goods between two points with the main objective of moving product from point of origin to destination in terms of cost temporary financial environment with customer requirements on the quality of goods and services delivery.

## 2. OBJECTIVES

Management is present in all structures regardless of their specificity of existence: in education, in politics, economy, military defense structures, internal order and national security, justice, culture and other fields. Presence management is the essential feature of the activities of any group of individuals.

The essential role of leadership is that it has initiative and creative design to direct efforts necessary to meet the goals and objectives that justify each organization.

"Leadership is not a function of one particular part of an organization, but has become a profession and a kind of work that takes place only on a theoretical and practical training staff involved in this area".

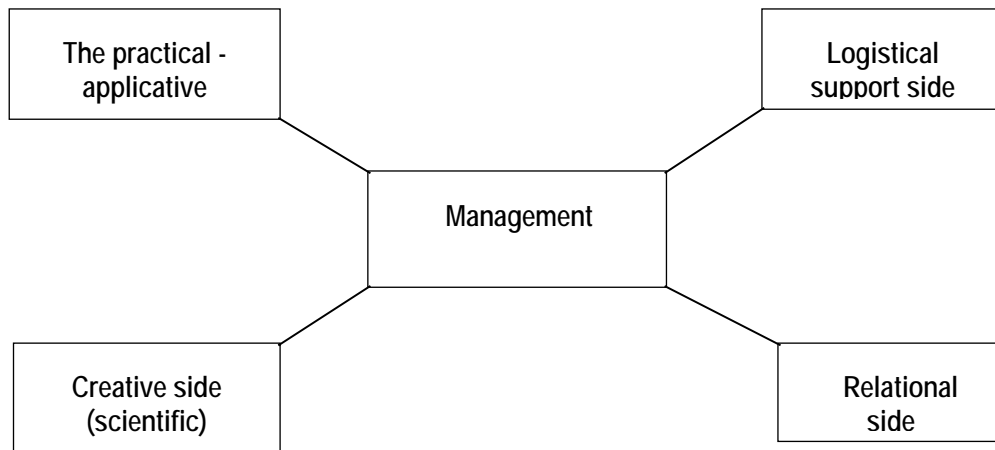
People's concerns towards ensuring a coherent character social, economic, military and other led to the development of science and management - also known as management, which means "holds", "to lead effectively" .

"Management is the process of designing and maintaining an environment in which individuals, working together collectively achieved efficiently set purposes."

Management is a complex of concepts, methods, procedures, actions and measures undertaken in order to ensure normal functioning, efficient and effective human communities organized structures including logistic and aims specifically planned objectives, in terms of the best possible material resources, human, financial and other help that has structure.

Management is also a state of mind, a vision, a certain way of approaching and even mentality, a flair for directing human efforts to achieve achievement, goals, goals, goals proposed in terms of high efficiency.

Management assumes the existence of logistical support, knowing that without the existence of such a component or structure and therefore there can be no other activity can take place. In the management process flow manifests a strong interpersonal relationship, a perfect joint efforts of individuals who are part of that structure as transposition of Figure 1.



**Figure no. 1**  
*Scientific components and relational schema management*

**The role and importance of transport**

The role of transportation is to provide the movement of goods, and / or people with minimum cost and time. The transport sector, in most organizations have a significant impact on all economic activities. Transportation costs represent today 9-14 % of the total costs of goods and services. Taking into account that logistics means the movement of goods ( raw materials , parts , subassemblies , finished goods ) from storage locations to places of consumption, then we can say that transport is one of the important activities of logistics.

Moving in space or distance creates value or utility space. The utility of time is created or added primarily through the activities of storage and storage , and transport play an important role in the establishment time utility, they causing the speed of the products ( travel time ), and safety

Amid the radical mutations in the political, economic, social, military products in Romania since 1989, there have been significant changes in terms of providing technical, material , and financial health . On this occasion won the notion and concept of " logistics", which was accepted, in the military, but also in many areas of social and economic activity across the country. Has intensified the process of optimizing logistics activities to create better conditions by providing means performing simpler handling and maintenance while ensuring greater rapidity in the conduct of activities .

Replacing the old concept of "Insurance material, technical and medical" with " Logistics" was due to the fact that it was considered that the new term is more conclusive and synthesized into a unitary several distinct sectors whose object activities necessary resources activities.

Most states define " logistics " as a whole and the material conditions of existence of those who work for the implementation of various activities.

In modern times, shipments may be defined as being dynamic and rational, consisting of specific technical means, equipment, communication means, handled by specialized personnel and which are designed for the spatial movement of goods and people.

Without transportation, the production of goods would be limited strictly to existing local resources and their exploitation would be determined solely by the necessity of satisfying social needs locally.

The role of transport is as follows:

- trade without transport would be limited to local market only. Following the development and improvement of means of transport market was expanded nationally and internationally, increasing its absorption capacity.

In most cases transportation is defined as the physical movement of people and goods between two points. Transport of goods is a basic set of logistics activities taking place in almost every marketing channel and is the creation of place and time utilities. Transport should not be defined only as a spatial movement of goods. Defined in terms of logistics, transportation is a basic set of activities that take place in most supply and distribution channels that result in the creation of place and time utilities.

### **Transport demand**

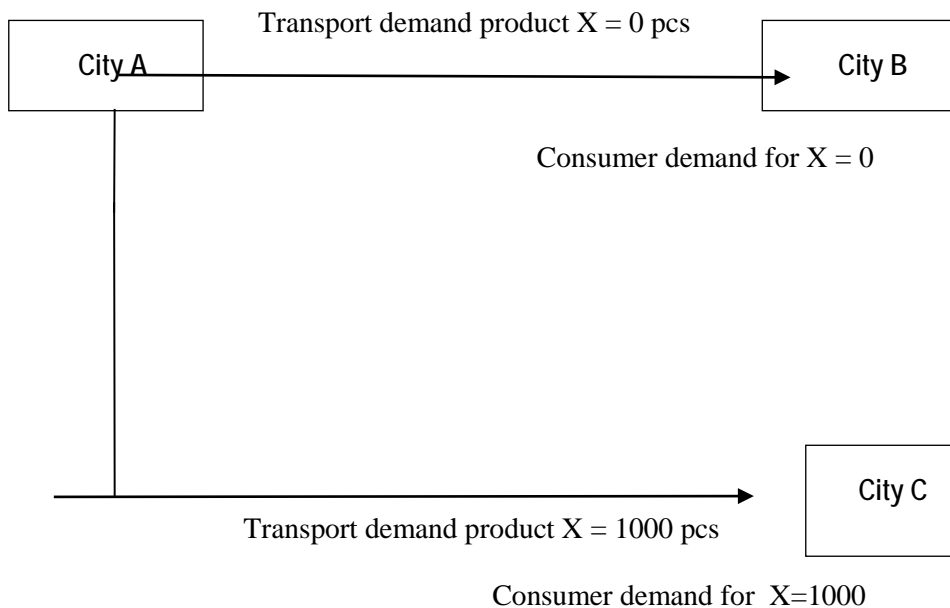
Imbalance of a particular product, between supply and demand within a geographic area generates transport demand. When a supply shortage, transportation will facilitate local demand patterns of products originating in other areas, and an excess supply situation, allows shifting to other markets. Goods are not in one place, without the need for that product.

Transport demand is so dependent on demand for goods. Consequently, it is considered that transport demand is a derived character. The reduction of the cost of transport for a certain product will increase demand for that product because of a large number of factors affecting demand for products, except the price of transport.

Labor specialization and mass production made some regions have an oversupply of production, while in other geographical areas to supply the deficiency will lead to the development of increasing transport demand of that product. We find that demand a product at a given location depends on the existence of consumer demand product to the place, and load that contains a product will not move in a certain place if there is a consumer need that good at there.

Figure 2 illustrates the nature of derived demand for cargo movement.

If product X has no use in city B there will be economic reason to move product there. City X has a consumption of  $X = 1000$  pieces, this can be a request for transport to the city, where there is an oversupply in town C which is a under offer.



**Figure no. 2**

**Transport request for moving cargo**

*Sources: Ilie Budică, Logistica mărfurilor, Ed. Universitaria, Craiova, 2010, pag. 120*

**Transportation cost structure. Efficient transport.**

Another dimension relates to the cost of transport economy. Depending on the criterion of change, costs are divided into two major categories - fixed and variable.

Fixed costs are those that vary the amount of work. These costs must be covered even where the company does not work (for example during a holiday or a strike). Carriers included with fixed costs related components: terminals, transport equipment, management of the carrier, information systems, some salaries of managers, etc.

Variable costs are those directly and predictably change according to activity level, the laity a period of time. A firm can avoid incurring transport costs variable only if no vehicle use. In this category fall the carrier's direct costs, related to each load.

Examples of variable transport costs are fuel costs, labor costs, cost of maintenance of equipment, cost of handling, loading and unloading. Prices charged by a carrier must at least cover variable costs, to allow the company to continue its existence in the business.

The existence of two categories of costs, depending on their short-term variation in relation to the workload, have positive repercussions on transport companies. Applying the principle of economy of scale makes it possible to reduce costs per unit transported, because achieving a higher volume of activity with the same fixed costs. You can get more types of savings, depending on how the action: savings due to a better use of means of transport capacity, savings from the use of vehicles larger, economies of scale in infrastructure, savings from increased park / fleet vehicles used.

In addition to criterion variation in relation to the workload, cost structure is analyzed according to the severability criterion. This criterion reflects the extent to which costs can be attributed to certain segments of business (products or services) or the entire business as

a whole. Is known as the criterion in the cost allocation of responsibilities for groups of users.

The severability criterion, it delimits the following categories: separable costs, associated costs and common costs. We consider each category listed:

- a) specific cost / separable. Are those that can be easily allocated to a particular output or a particular sender or recipient. For example, will consider the loading and unloading a vessel, to a specific user;
- b) costs associated. These costs relate to situations where providing a service entails offering another service. One is the product of other services. Associated services are produced in fixed, which means that there may not be a variation in costs;
- c) common costs. Are a category similar to those associated costs, because they are generated by providing a service, a type of user. However, common costs are different from those associated with the use of resources that offer a service does not lead inevitably to another service offering.

Associated and joint costs cannot be separated. They require the use of allocation methods.

### **Transport scheduling and routing**

The transport activity, and crystallized a number of principles for good programming and routing. The most important principles can be stated as follows:

- transport drivers will be loaded with goods to be delivered to destinations located near some others. The objective is to minimize stopping distances traveled between points and the travel time between points. Routes will be designed to follow the concentrations of close stops.
- stops on different days will be scheduled so as to form a compact group. It aims at minimizing the number of vehicles required to serve all stopping points, and minimizing travel time and distance along the week. Therefore, avoid overlapping groups of points served on different days of the week.
  - designing a stop routes will start with the earliest delivery to store goods. It will identify the most remote stop and start tracing the route, in reverse, to the warehouse of origin.
  - the most efficient routes are designed based on the use of larger vehicles available. From a fleet of vehicles of different capacities the largest vehicles, will be used first.
  - the goods must be included in the delivery routes, instead of being left at the end of the route. This principle avoids the crossing of certain segments of the transport route. Compliance depends on the size of the quantities of goods taken, the vehicle configuration and the extent to which it is not blocked access to goods already in the vehicle to be delivered.
- a stop which is very long compared with the group of points that constitute the route is a good candidate for an alternative means of delivery. Given that such a stop is included in route distance increases, the total transport and hence transport costs.
- time restrictions will be avoided which greatly diminishes during shutdown. Failure to observe these restrictions lead to inconsistencies in relation to original programming. It recommended a review and modification of terms.

Depending on the particular transport activity made with its own fleet, the analysis may focus only on some of the indicators presented or consider a larger number of levels of aggregation.

### 3. METHODOLOGY

Maintenance activities generated throughout the logistics system often differences of opinion. Analysts say production systems, mostly because the place is with the maintenance operations for users to be involved in carrying equipment operations, maintenance and training opportunity for a whole organization able to achieve objectives. For institutions or unproductive maintenance and repairs can be assimilated support activities (support) required for proper execution of the most logistical maneuvers.

Maintenance concept is a set of measures and actions to prevent, maintain or restore the ability of machinery to provide a particular service while minimizing their costs.

The main problems are related to maintenance: selection of equipment and their components, determination optimal maintenance method, determination of the optimal replacement of equipment components, size of its workforce needs, establishing the necessary spare parts and stock size, determining the optimal timing of replacement of equipment.

In terms of logistics, the decisive factor in increasing the efficiency of management, compared to an integrated system is choosing the optimal method of maintenance. Mutations occurring in logistical work required the use of several methods of organizing maintenance. Classified literature methods maintenance organization, usually in five categories: corrective maintenance, routine maintenance, a preventive maintenance planning, preventive system – planned, palliative system.

Planned maintenance interventions are: technical inspection, repair and overhaul current. Technical review results in an amount of operation, usually performed before a planned repairs and follow evaluation of technical condition and setting of the good works done in the planned repair.

The main operations in the technical review are: checking the overall state of maintenance, examination of subassemblies and components in use, check and determine the condition of parts exposed to wear faster, replacement of parts with particular importance in the operation of equipment to have a degree of wear over the scale allowed or not be trusted in operation until the date of planned repairs, conducting tests and adjust precision devices, safety and control.

Current repairs are all running regular activities in a planned, to eliminate wear due to normal operation or damage to equipment, by repairing, rebuilding or replacement of parts or component modules.

The main interventions of the current repairs are: check the above conclusions of technical inspection, partial removal of components subject to wear frequently, repair, restoration, replacement and calibration of parts or modules, removing deviations from accepted standards registered on joints or moving parts, cleaning, greasing and lubricating equipment, check and make corrections to the dynamic components, checking and correction and limiter control devices, safety, precision and user protection equipment, restoration areas and the parties subject to environmental or chemical factors resulting from the operation.

Overhaul the entire business is conducted in a planned maintenance cycle after operation, provided the technical regulations, standards planned by reducing equipment, replacement, restoration or repair worn parts and / or upgrading in order to ensure the technical parameters and initial meet the normal operation established by law.

The peculiarity is that capital repairs with technical interventions may make improvements or upgrades provided that the total value of work does not exceed 60% of the replacement value of the equipment.

Regular inspection refers to the check operation in order to detect defects. Observations are recorded in the records technical-operational. Partial inspection activities are all carried out to verify the operation of the main parts, assemblies and modules that makes good use of own technique and evaluating the performance parameters of accuracy, precision and safety.

General inspection is to verify the detailed operation of the equipment supplied. It is a planned activity such as periodicity, monthly, quarterly or yearly. Unlike other types of inspections, general inspections are aimed at verifying equipment as a whole to be identified and evaluated technically all faults and then eliminate them.

#### 4. ANALYSES

Transport occupies a central place in logistics activity through which ensures mainly links between system components: sources, storage, databases, or operational combat forces. Is the engine that determines the efficiency, speed and extent of all logistics.

However, between the transport logistics activities undertaken by military logistics and transport companies there are some notable differences.

Transport logistic is the set of activities planned, organized and conducted for spatial movement of materials from sources of supply to the wrestler (technical, warfare, etc.) As well as those abundant on the battlefield, the back set of places time.

Definitions assigned military transport highlights two categories of topics of travel: first class refers to the combat units and formations, and the second the material and equipment necessary to carry out operational this category actually represents transport logistics under the jurisdiction of the head logistical structure.

Another distinction can be made to transport military objectives by nature. Thus military transports are designed to: increase readiness, deployment and location of forces, supply and replenishment, disposal, dispersal and regrouping. Also, shipments are real, in achieving the above objectives or false effectuate tactical or strategic purposes

At the level of military transport program is based on transport. Data on the operation and maintenance of transport are highlighted specific documents on the move (Roadmap mission order), use kilometers (planning register and use the mileage), use, maintenance, repair and conservation (book board).

Largest share in the actual execution of transport and materials hold the cars due to their diversity in terms of types and load capacities, which ensures a high degree of efficiency and allows adaptation to the requirements of carrying out the tasks and actions the structures. Auto transport besides can be routed in any direction, but have the disadvantage that they are dependent on the existing road communication network and its state of viability.

For carrying shipments of materials from supply sources located far away from the territory of the military action until near the deposit units using rail. Rail transport is particularly advantageous because it provides a significant savings vehicles that can be used to perform other missions.



In urgent cases and for limited quantities when it is not possible to use other means can be employed to transport troops and materials, air assets (airplanes and helicopters). This type of transport is used when supplementation is needed for transport and logistics workforce.

Another feature is the way military transport cover transport demand, it is solutions with transportation in the equipment unit, the addition of other units, the extra equipment, the rental, purchase transport services from various specialized providers and authorized, in cooperation with local administrative bodies or requisition. As shown, in exceptional circumstances determined by law, military logistics structures have greater opportunities to address the need for transport compared to such companies. Now referring specialists in logistics and transport activities outsourcing.

Governing bodies reflected their logistics activities related to planning, organizing and carrying out transport, the following documents: requests for transport, transport software, orders to march, orders and orders to distribution logistics.

Transport people and materials is well established by the rules that are necessary to be known and applied. Thus, the transport of ammunition together with fuel or other flammable material, such as food and fuel and lubricants, chemicals and explosive materials, or herd them with material that is injurious to health or life-threatening. This requires a detailed analysis of transportation needs for a more rational use of resources, leading to elimination of unnecessary travel, waste of fuel and also increase transport efficiency and safety.

## 5. CONCLUSIONS

In evolution, logistics known structural changes, acting and relational characteristics according to historical periods experienced by the Romanian people.

Logistics is becoming a tool to reach global scientific social structures by which ensure the flow of information, materials, products, people etc., To conduct all activities with lower cost.

Today, more and more researchers state that logistics will become an independent science that will study information and material flows that result of the work must be obtained in time and reach the consumer quality, quantity and timing set.

It is considered that logistics covers technical and material aspects in which the important human actions. They talk about logistics education, military logistics, marketing logistics, logistics negotiations, logistics, etc. criminals. Renowned economic experts trying to convince us that "managers will be successful logisticians who will have an overview of the strategic plans of your company and understand the role of logistics in the success of these plans. Logistics will play a strategic role in achieving significant competitive advantage by firms competing in global market conditions ".

Transport activity remains one of the most important components of logistics-structure that will provide material resources, financial and human resources for the successful completion of specific tasks.

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