



The International Journal of
TRANSPORT & LOGISTICS
Medzinárodný časopis
DOPRAVA A LOGISTIKA

ISSN 1451-107X

COSTS OF LOGISTICS IN THE COMPANY

Alfred Szydelko¹

¹ Rzeszow University of Technology, Faculty of Management, Department of Finance and Banking, 8 Powstańców Warszawy Ave., 35-959 Rzeszów, Poland, Tel.: +48 17 865 19 16, szydelko@prz.edu.pl

Abstract: *The paper presents the main issues concerning the concept, scope and classification of logistics costs in the company. There were noted difficulties in identification and ordination of these costs due to their differences as for the costs from the point of view of accounting.*

Key words: *logistics, costs of logistics, costs classification, costs account*

1 INTRODUCTION

The activity of each company requires incurring costs that are related to the manufacturing products and logistics processes. In Fig.1 there was presented the place of logistics costs in the cost of the product.

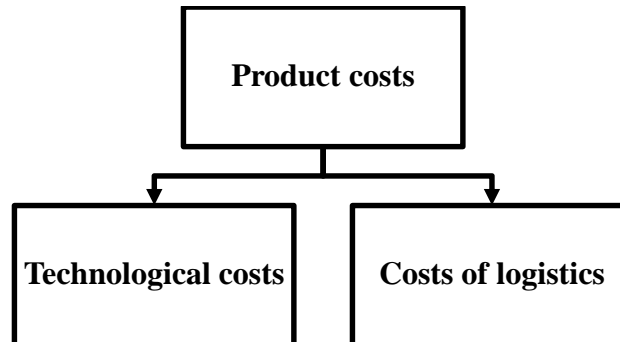


Fig.1 The place of logistics costs in the product cost

Technological costs are the costs associated with manufacturing the product. They are determined by the parameters of the quantitative use of resources and the required product quality as well as the elements of the valuation which provide the cost expression in monetary units.

Logistics costs are the costs associated with the widely-understood movement of goods and are dependent on the parameters based on the time and space and the elements of valuation. Logistics costs are the result of the fact that logistics creates conditions for the emergence of these movements, manages and protects them [2].

2 THE NATURE AND SCOPE OF LOGISTICS COSTS

Logistics in the modern company has a systemic nature and its functioning should pursue objectives in line with the tasks set for the entire company. This compatibility is determined by isolating the logistics subsystems to ensure the implementation of the formulated objectives. In practice, the distribution of logistics systems is performed according to the criterion of the stages flow, which are characterized by:

- logistics processes of supply subsystem,
- logistics processes of production subsystem,
- logistics processes of distribution subsystem.

The main task of the logistics supply subsystem (supply logistics) is to provide the company with components necessary for a continuous and rhythmic activity. Supply logistics thus includes activities related to the receiving of materials and other tangible goods to the warehouse to check the correctness of the contract, storage, internal transport and planning, command and the material and information flow.

Logistics of production is associated with materials protection of manufacturing processes and transfer of semi-finished and finished products to the warehouses. So its scope includes planning, organizing and controlling the flow of raw materials (mostly material) and components from supply depots, through indirect departmental warehouses, base and station ones up to the end sales warehouses.

The main task of the logistics distribution subsystem is to coordinate the flow process of goods to the final consumer, taking into account the market situation. The aim of coordination activities is to optimize the processes taking place in the distribution and the correct placement of human resources, material and financial resources in order to attain the level of customer service.

The allocation of costs to the logistics subsystems from the global costs of the company allows for logistics costs separation. In this sense, the cost of logistics can be defined as the monetary reflection of the assets' use resulting from the processes of planning, implementation and control of material and products flows and the associated flow of information, as well as the realization of logistics control functions, management of inventory and physical distribution [6].

The logistics costs are the result of:

- resources consumption,
- management of logistics activities,
- financial expenditure.

Logistics costs are the result of consumption of resources (human labor, materials, buildings, machinery) within the ongoing activities, the scope and range of logistics processes of operating cash flows of materials, semi-finished products, finished products and stocks held.

In addition to the activities related to the product there are many activities that create logistics costs that do not add value to the products directly (supported materials, products or goods) and are incurred for the organization of the company and warrant the proper realization of logistics activities (planning and forecasting, monitoring, analyses, scheduling activities, resources development).

Logistics costs also arise as a result of financial expenses related to taxes costs, various types of fees, maintenance costs, borrowings for the logistics and the costs of financing capital stock (in stock, in transport, in the course of production). [5]

In company practice the big influence on the financial result of the company have three important types of logistics costs which are presented graphically in Fig. 2.

The material costs include all costs arising from the supply of raw materials, auxiliary materials, fuel, semi-finished products, finished products and commodities.

Capital costs (costs of pension capitalization) encompass primarily interest on capital related to a supply (costs of foreign capital, costs of capital, costs of mixed capital), deductions for depreciation of the value of items in storage and storage costs.

Management costs, also referred to as general material ones, are the costs concerning the places of creating costs of all the departments connected with the materials management (mainly of procurement and logistics). They also include the costs of transport, the costs of packaging, processing costs, and disposal ones.

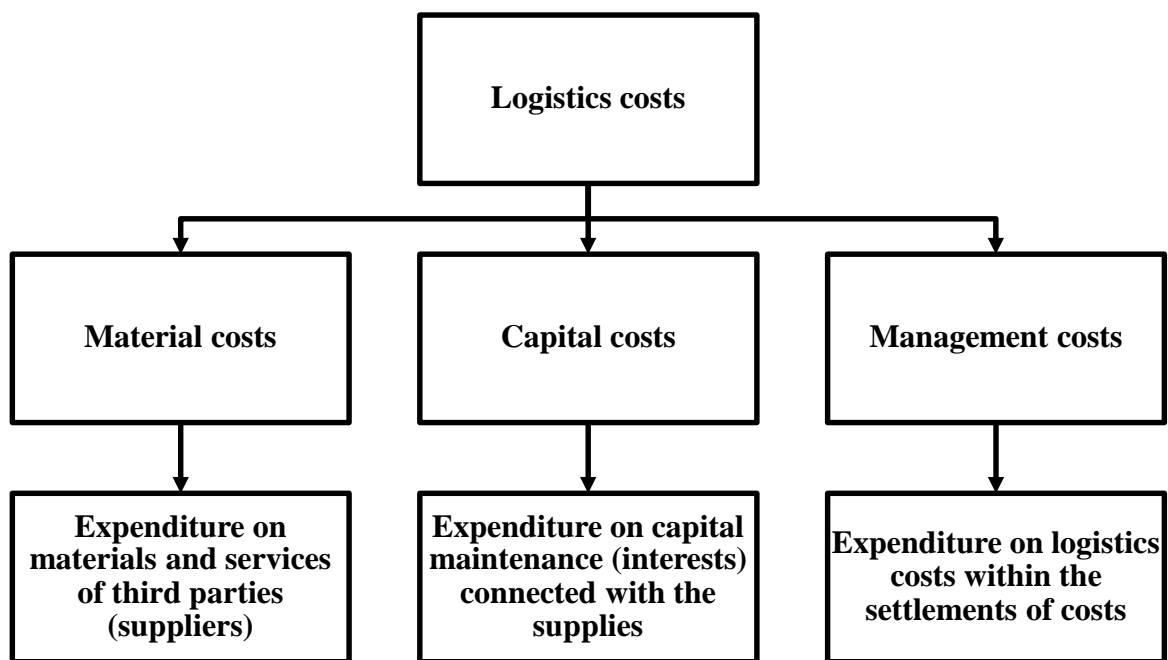


Fig.2 Relevant kinds of logistics costs

3 DICHOTOMY OF LOGISTICS VS. LOGISTICS COSTS

The nature, scope and classification of logistics costs are affected in particular by binomial distribution of logistics:

- theory of logistics,
- logistics practice.

Scientific theories developed in the field of logistics allow, in theory, for a precise identification and classification of logistics costs. However, there are serious difficulties in the sphere of practical application of logistics systems in defining and measuring logistics costs for a particular company. The dichotomy of this relationship is mainly due to the lack of appropriate measurement methods, grouping, accounting, recording and reporting of logistics costs. Costs account of the company within the accounting system aims at providing information for the financial result and possibly for the establishment of the manufacturing cost in accordance with the balance law [4]. Accounting regulations do not include the terminology associated with the different categories of logistics costs, hence the measurement and assessment of logistics costs are usually estimated, and the degree of accuracy is conditioned by the way of collecting and processing information on economic events in the company's accounting system.

In theoretical terms, the real costs arising in the logistics system can be classified as:

- costs determined by logistics processes,
- random costs (probability),
- hypothetical costs.

Costs determined by logistic processes (logistics costs in the strict sense) are the major burden in the logistics costs structure. They are directly related to

the implementation of specific logistics processes, such as purchasing materials, transport, storage and distribution of finished products. They also cover the expenses necessary to maintain the standards of customer service and quality of products.

Random costs (costs of extraordinary “events”) result from extraordinary losses and property losses that occur during normal logistics activity. They derive from the wrong standards and quality of materials, products, and logistics processes themselves. Failure to maintain these standards are then connected with price discounts, rebates and cash discounts. Often these costs are also the result of factors beyond the control of the company (economic recession, climatic conditions, legal regulations).

Hypothetical costs (opportunity costs) mean unrealized income (loss) due to the lost economic transactions. They are related, in particular, to the lack of adequate stocks for which there was a market or production demand, as well as with the wrong customer service, and the deterioration of the market position of the company.

4 MAIN CLASSIFICATION OF LOGISTICS COSTS

In the literature of the subject, there is a common view on the problems connected with the logistics costs [3]. It regards, especially the practical aspects of logistics costs, mainly their classification.

Understanding the logistics cost structure is the starting point for decision-making to optimize these costs. Considering the applied in a company practice the cost accounting principles and characteristics of a company's logistics systems, and taking into account the nature of the business and the system of cost accounting, logistics costs can be divided according to the following criteria [1]:

- by the type,
- flow stages and places of their existence,
- relations with basic type of logistics processes,
- volatility in relation to the size of material and inventory flows.

The synthetic specification of logistics cost according to the presented criteria was presented in Table 1.

The criterion by the type divides the logistics costs according to the typical system used in the accounting records (depreciation of fixed assets involved in the implementation of logistics processes, materials and energy usage for logistics purposes, the cost of salaries and benefits for staff responsible for carrying out the tasks of logistics, costs of services provided by foreign operators, taxes and fees, other costs by type).

According to the criterion of flow, phases and places of costs incurring, there are costs incurred in the company departments that are responsible for the flow of material and information flows. This applies in particular of procurement (materials and semi-finished products warehouse, internal and external transport), departments of production and internal transport control and sales departments. This criterion should therefore allow to separate the costs of sourcing, production, distribution, storage and recycling of waste.

A commonly used criterion for classification of logistics costs is their division into types (segments) of logistic processes. As a result of its application the logistics costs are divided into the costs of the physical movement of tangible goods in logistics processes, the cost of maintaining inventory and costs of information flows.

Tab. 1 *The main criteria of logistics costs division in a company*

Costs by the type	Costs according to the flow stages and places of their existence	Costs according to the logistics segment	Costs according to volatility
<i>Material costs</i> (amortization, the use of materials, fuels and energy, outsourcing).	<i>Costs of supply stage</i> (supply, warehouses, transport)	<i>Costs of physical flow</i>	<i>Fixed costs</i> (amortization, expenses on taxes and fees)
<i>Intangible costs</i> (salaries with charges, costs of foreign capital engagement, expenses on taxes and fees)	<i>Costs of production stage</i> (production control, internal transport)	<i>Costs of supplies</i>	<i>Variable costs</i> (salaries, costs of capital commitment, costs directly affecting the outcome)
<i>Other costs</i>	<i>Costs of distribution stage</i> (sale, transport, warehouses)	<i>Costs of information processes</i>	

According to the criterion of variation logistics costs are divided into fixed and variable ones. Fixed logistics costs are not dependent on the size of material commodity and information flows (in practice, they are a constant amount in a given time unit). The logistics variable costs are those costs that depend on the market activity of the company and the scale of logistics activities.

5 CONCLUSIONS

The importance of logistics costs to improve the company efficiency is getting bigger. Optimization of the company's costs, including the cost of logistics, requires information base supporting making good decisions. Managing logistics costs encounter difficulties with their unique identification as to the scope and content, as well as their classification. These problems are mainly due to significant discrepancies in the classic (balance) understanding of costs and their recognition in logistics. This causes certain difficulties in obtaining information on the actual costs of logistics (ex post), as well as in the process of budgeting (ex ante).

In practice of the companies there are attempts to select the logistics costs from other cost categories established within the cost accounting, and also it is created a special independent logistics cost account (it concerns especially the companies which use management supported by the controlling system).

References

- [1] Biernacki M., Kowalak R.: Rachunek kosztów logistyki w zarządzaniu przedsiębiorstwem, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2010, 34 p., ISBN 978-83-7695-005-1.
- [2] Malinżak D., Gazda A.: Podstawy teorii logistyki w przedsiębiorstwie, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2011, 8 p., ISBN 978-7199-692-4.
- [3] Skoczylas K.: Koszty i controlling logistyki w przedsiębiorstwie, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2010, 26 p., ISBN 978-83-7199-630-6.
- [4] Szydełko A.: Sprawozdawczy rachunek kosztów. Aspekty księgowo i zarządcze, Stowarzyszenie Księgowych w Polsce Oddział Podkarpacki w Rzeszowie, Rzeszów 2010, 12-15 p., ISBN 978-83-930940-0-4.
- [5] Śliwczyński B.: Controlling w zarządzaniu logistyką. Controlling operacyjny. Controlling procesów. Controlling zasobów, Wydawca Wyższa Szkoła Logistyki, Poznań 2007, 201 p., ISBN 83-917966-7-1; 978-83-917966-7-2.
- [6] Twaróg J.: Koszty logistyki przedsiębiorstw, Wydawca Instytut Logistyki i Magazynowania, Poznań 2003, 52 p., ISBN 83-87344-26-5.