“Logistics costs accounting: challenges for identification in Ukrainian accounting practice”

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LOGISTICS COSTS ACCOUNTING: CHALLENGES FOR IDENTIFICATION IN UKRAINIAN ACCOUNTING PRACTICE

Abstract

Development of an effective logistics infrastructure for companies contributes to ensuring their effective work, directly affects financial performance and requires the establishment of a management and accounting system for logistics costs. Classifying and registering logistics costs becomes more important in this regard. At this stage of Ukrainian accounting practice, there are challenges for logistics costs accounting such as their identification and registration. Methodological basis of study among different logistics concepts (concept of general logistics costs, concept of reengineering business processes in logistics, concept of an integrated logistics strategy, concept of supply chain management) was total logistics costs concept or the concept of full value as well as process-oriented approach. In the work, the generalization and formalization of existing approaches to the logistics costs accounting was made. Feasibility of using a process-oriented approach among other approaches (absorption costing, direct costing target costing, kaizen costing, etc.) were substantiated. The algorithm of identification and registration of logistics costs for Ukrainian enterprises was proposed. It is based on such inclusion in the relevant economic process (supply, production, sales and administration of logistics processes) and the use of a new consolidated account 29 "Logistics costs". This authors' approach to solving the problem of identification and registration of logistics costs for accounting purposes allows to optimize and increase the informativeness of accounting logistics costs reflection in Ukrainian accounting practice.

Keywords logistics cost, accounting, cost identification

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INTRODUCTION

Global business trends demonstrate enormous links with logistics. The effectiveness of logistics infrastructure and service directly affects the profitability of entities' activities. Each company in any branch of the economy bears the logistics costs, both at its own expense and on outsourcing. However, domestic companies do not have enough experience in rational accounting and control of this type of costs.

In the broadest sense, logistics costs are the total amount of resources (material, financial, labor, innovation, intelligence, information) used to implement the company logistics operations and functions (transportation, warehousing, customer service and consumer). These costs play a significant role in ensuring normal life cycle of products, based on the provisions logistic concept of the enterprise, which involves saving time and increasing competitiveness in the business environment.

In the structure of logistics costs, the largest share belongs to the products transportation costs and storage costs. Other logistics costs are

represented as follows: the cost of packaging and repair, the services of third parties and re-sellers, the cost of managing the logistics system, etc.

Managing logistics costs plays an important role for businesses engaged in international trade. In this case, the value of logistics costs in the total cost of production can have a decisive impact on profitability (fuel, clearance of permit documents, insurance, freight, customs payments, etc.).

Scientific interest in logistics costs accounting in Ukrainian companies is determined by the need to develop theoretical and methodological recommendations and practical tools for their classification, measurement and identification in order to optimize financial flows and improve the management of such costs. Since accounting information is the most important source of information support, accounting aspects of logistics costs require a detailed study. In particular, main challenges for logistics cost accounting in Ukraine are the lack of methodological recommendations on the accounting and distribution of these costs, the imperfection of the current regulation of this issue, as well as the non-compliance of the current plan of accounts with the needs for logistics costs accounting.

1. LITERATURE REVIEW

For the first time logistics costs in foreign economic literature began to be investigated in the 60's of the 20th century. In general, in the logistics costs management and accounting, four basic concepts were distinguished:

- the concept of general logistics costs;
- the concept of reengineering business processes in logistics;
- the concept of an integrated logistics strategy;
- the concept of supply chain management.

Table 1 shows the characteristics of the above concepts. However, the main place in logistics science is the concept of total costs, or the concept of full value. This concept has become the basis for making optimal logistics solutions and logistics costs accounting.

Recent scientific researches also draw their attention to logistics cost accounting (Gu & Dong, 2016; Jamali et al., 2017; Biernacki & Kowalak, 2010; Göbl & Froschmayer, 2011; Maley, 2015; Malindżak & Gazda, 2011; Stępień et al., 2016). A good example of investigation of connection between identification of logistics costs and efficiency of management one can find in Stępień et al. (2016). But this example is concerned to logistics management field, not accounting at once.

Some issues of improving the accounting of logistics costs are highlighted in the works of a number of Ukrainian scientists. It is worth to note that they give some special issues on Ukrainian plan and order for accounting of logistics costs.

Table 1. Characteristics of fundamental logistic concepts

Concept	Year	Origin	Representatives	Essence
Total cost concept (TLC)	1956	The USA	Lewis, Culliton, and Steele (1956)	The total cost includes all the costs necessary to meet the needs of logistics. The main idea is an analysis of the costs of all units, which allows to investigate how the logistics costs are interrelated and determine the entire structure of costs
Business process re-engineering (BPR)	1990	The USA	Hammer and Champy (1993)	BPR is an approach to recycling business and logistic processes to generate profits and business restructuring with the help of engineering methodology
Integrated logistics concept	1980–1990	Western Europe	Bowersox and Closs (1996)	The logistics system is considered as a system for regulating business process goals from a supplier to an end user
Supply chain management (SCM)	1982	UK	Oliver and Webber (1992)	Management concept and organizational strategy, which is an integrated approach to planning and managing all flows of information about raw materials, products, services that arise and turn into logistics and production processes of the enterprise, aimed at measurable aggregate economic effect (cost reduction, demand satisfaction to the final product)

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Levkovych and Medvid (2017) suggest proposals for accounting for second-pillar liability centers by developing a work-plan of accounts using the 3rd and 4th level analytics.

Andrukhova (2010) suggests the new account 29 "Logistics supply costs" and expansion of accounts 91 "General Production Costs" and 92 "Administrative Cost". Golovashchenko (2010) proposes the expansion of existing cost accounts (91, 92, 93) and the detailed analysis of these accounts for the needs of logistics costs accounting. Sumecz (2017) proposes a process approach for accounting logistics costs, by the phases of the logistics process.

In fact, only one account 93 "Sales cost" is included in the current account plan for accounting for logistics costs. However, according to the authors, logistics costs can occur at any stage of economic activity, and not only at the stage of realization. Therefore, this account does not provide information for the full amount of logistics costs.

In addition, one can do not agree with the suggestions of some authors regarding the analytical details of the account 93 "Sales costs" in terms of logistics costs. Sales costs are by their nature logistics costs and should be related to this account in whole amount. Therefore, it would be more appropriate to agree with the authors' suggestions on analytical detail on logistics costs for other accounts.

Therefore, there is a management approach to the logistics cost accounting in works of a number of authors. Also more concentrated on accounting procedures issues are presented in Ukrainian scientists' works.

2. ACCOUNTING METHODOLOGY OF LOGISTICS COSTS

Common point in these works is finding the most appropriate methods for logistics costs accounting. The most popular metohods in management and accounting theory are given in Table 2.

It is necessary to stress that abovementioned methods should be chosen in accordance with their relevance for accounting methodology: Absorption costing, Direct costing and Standard costing are more appropriate methods of logistics costs calculation; Direct product profitability, Activity-based costing and SCOR – as methods of distribution of logistics costs; Target costing and Kaizen costing as methods of logistics process organization. Whole stage of logistics costs accounting is ab-

Table 2. Logistics costs accounting methods

Title	Opportunities of usage	Essence	Peculiarities
Methods of logistics costs calculation			
Absorption costing	Used to compile external financial statements	Cost calculation based on all costs incurred	Costs are not divided into constants and variables, it is difficult to calculate the costs that are directly attributed to a single product or element of the supply chain
Direct costing	Operational control over volumes of expenses in the short-term period, compilation of internal reporting	When calculating the cost, variable costs are taken into account	It is not possible to apply in the long-term period
Standart costing	Operational control over the cost of production	Calculation of expenses is carried out on the basis of standards, and management is carried out for deviations of actual costs from normative	Normative calculations are based on the cost norms, effective at the beginning of the month
Methods of logistics costs distribution			
Direct product profitability	Cost accounting for products	Detailed determination of the basis for the distribution of costs for logistics operations and the use of fixed assets	Targeted on the specifics of retail trade. It allows to take into account the cost of frozen stocks
Activity-based costing	Cost accounting for processes and activities	Method of distribution of costs between products on the basis of contribution to the production process of production costs from indirect activities	The most widespread by companies that carry out foreign trade
SCOR (supply chain operations reference model)	Cost accounting using balanced measurement criteria for strategic supply chain solutions	Detailing the processes in the five areas of the supply chain and identifying problems in it	Integrates business concepts for process reengineering and benchmarking

Table 2 (cont.). Logistics costs accounting methods

Title	Opportunities of usage	Essence	Peculiarities
Logistics process organization			
Target costing	Development and production of new products, access to new markets. Innovative industries, short-term period	Achievement of the target cost at the stage of designing a new product	Search for innovative ways to manage costs, regardless of other important aspects such as product quality and time to sales
Kaizen costing	Traditional branches of industry whose products are characterized by a long-term life cycle	Providing the necessary level of cost and finding opportunities to reduce costs to a specific target level in the production phase of a new product	Continuous improvement of logistics activities

sorbed only in the process-oriented approch. This is method used for identification and assignig costs to each relevant process. It is used in this work as comprehensive methods, recommended by Ukrainians scolars.

3. CURRENT CHALLENGES AND TRENDS IN UKRAINIAN PRACTICE

It should be noted that accounting for logistics costs in Ukraine is not regulated. The main document on cost accounting is National Regulation (Standard) of Accounting 16 "Costs". However, this normative legal act does not reveal the specifics of logistics costs. Some scholars propose, to eliminate this shortcoming, to make certain changes to the current normative base. In particular, Sumets (2017) in his monograph proposes to introduce an addition to the existing NRSA 16, in relation to the definition of the concept and classification of logistics costs, or to develop a separate standards "Logistics costs".

There is also some inconvenience in accounting for the logistics costs in the current account plan. The accounts used to collect information on logistics costs are as follows:

- 209 "Other materials" – contains information on transport and procurement costs (TP);
- 91 "General Production Costs";
- 92 "Administrative costs" – expenses for management of logistics;
- 93 "Sales costs" – by their very nature, are logistical costs.

In addition to existing accounts, there is also a practice of expanding sub-accounts and analytical accounts based on the needs of each individual company (for example, expansion of sub-accounts 91, 93 accounts). Besides, some scientists are talking about creating a separate account 29 "Logistics costs".

Separate issue in logistics cost accounting in Ukraine is substantiation of the process approach usage in the current accounting practice. Table 3 generalizes features of logistics costs identification and registration through this method.

These features include types of process (Supply, Production, Sales, Administration (Management)), as well as inclusion in the cost of finished products and effect on the financial result of the reporting period.

Thus, at this stage of domestic accounting practice, it is necessary to distinguish the following features of accounting identification and registration of logistics costs:

- the current plan of accounts does not provide separate accounts for logistics costs accounting;
- there is a need for a clear definition of all costs that are directly related to the logistics activities of the enterprise;
- in order to organize timely accounting of grouping of costs, it is necessary to carry out both types of works and operations, and according to the centers of responsibility;
- it is not enough to control the costs of only the enterprises, and it is necessary to take into account the costs of all participants in the logistics chain.

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Table 3. Accounting identification of logistics costs in the process approach

Type of logistics activity	Components of logistics costs	The object of accounting	Account	Inclusion in the cost of finished products	Effect on the financial result of the reporting period
Supply					
Costs for physical movement, when purchasing fixed assets	Transportation costs, loading and unloading work	Initial cost of fixed assets	10	Depreciation	Indirectly, throughout the depreciation period
Costs for physical movement when buying stocks	Transport and procurement costs	Actual cost of inventory	20, 22, 28	By degree of usage in the production process	Indirectly, depending on the degree of use in the production process
Production					
Costs of physical movement of stocks between production operations	Transport costs for moving by company	Main/auxiliary production costs and general production costs	23, 91	In whole volume	Included in the costs of the reporting period, in which finished products are manufactured
Sales					
Package	Wages, packing cost	Sales costs	93	Not included	Included in the expenses of the reporting period, in which they arose
Retention of the sales department	Wages, amortization of fixed assets, taxes and fees, the cost of electricity and heat	Total production costs	93	Not included	Included in the expenses of the reporting period, in which they arose
Holding of the finished goods (goods)	Wages, amortization of fixed assets, taxes and fees, the cost of electricity and heat	Sales costs	93	Not included	Included in the expenses of the reporting period, in which they arose
Administration					
Maintenance of the supply department	Wages, amortization of fixed assets, taxes and fees, the cost of electricity and heat	Total production costs	92	Not included	Included in the expenses of the reporting period in which they arose
Maintenance of inventory	Wages, amortization of fixed assets, taxes and fees, the cost of electricity and heat	Total production costs	92	Not included	Included in the expenses of the reporting period in which they arose

In order to solve the problem of accounting logistics costs, it is proposed to reflect such costs in accordance with a process-oriented approach.

If the logistics costs can be directly attributed to the corresponding process, then these costs are proposed to account as follows:

- the process of delivery (debit account 209 "Transport and harvesting costs"): transport and procurement costs, transaction costs due to the conclusion of supply contracts;
- production process (debit account 239 "Logistic costs of production"): the cost of internal transportation, storage costs of products;
- the sales process (debit account 93 "Sales costs"): logistics costs in full;
- administrative activity (debit of account 929 "Costs of administration of logistic processes"): information flow management, general management and service of orders.

In the case when one cannot directly attribute logistics costs to the costs of a separate economic process, it is suggested to use a special account with the subsequent cancellation of logistics costs after their distribution.

The author's generalization of the investigated approaches allows to formalize the authors own approach for accounting logistic costs, as demonstrated in Figure 1.

The proposed author's approach to solving the problem of identification and registration of logistics costs for accounting purposes, taking

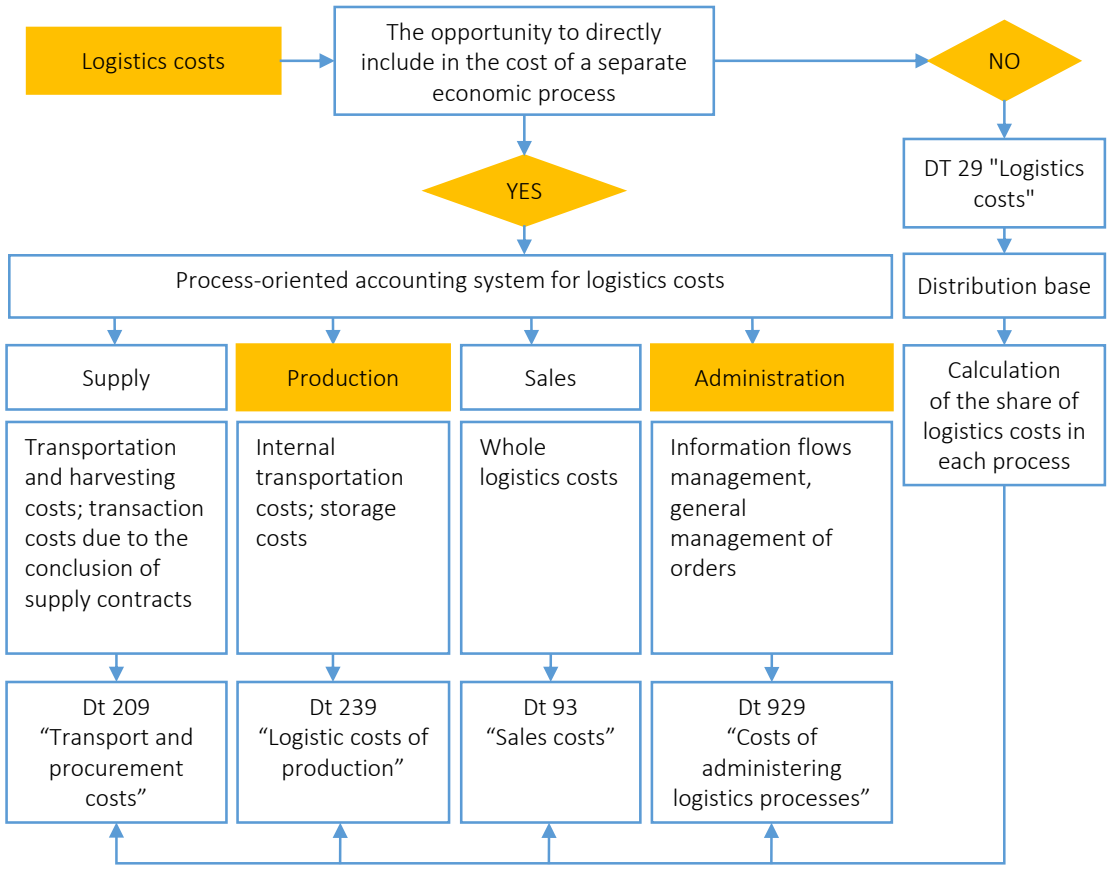

Figure 1. Algorithm for identification and recognition of logistics costs in accounting in accordance with a process-oriented approach for Ukrainian companies

into account existing proposals for the improvement of the specified site, allows for generalizing existing approaches in a single algorithm in order to optimize and increase the informativeness of accounting logistics costs reflection in Ukraine.

CONCLUSION

The wide variety of existing classifications, management concepts and calculation methods indicates the complexity and importance of logistics costs and necessitates the further study of this issue towards accounting cost identification and recognition.

The issue of accounting logistics costs requires a lot of attention from scientists. For today, the domestic accounting and methodical literature does not provide for accounting aspects such as the allocation of logistics costs in general as a separate concept, and no account is provided for their recognition. Part of the costs are reflected in the account 209 "Other materials", or 289 "Transport and procurement costs". General production and general expenses directly related to logistics are reflected in the accounts 91 "General Production Costs" and 92 "Administrative Expenses", respectively. In essence, close to logistics costs are the costs accrued in the account 93 "Sales costs".

When carrying out the accounting and forming the cost, it is necessary to clearly distinguish the transport costs that arise when purchasing and selling the goods. The first of its nature are transport-harvesting, the second are sales.

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Based on the study of existing approaches to reflecting logistics costs on accounting accounts, an author's vision for solving the problem of identification and accounting of logistics costs was developed in accordance with a process-oriented approach. This algorithm considers the possibility of direct inclusion of logistics costs in a separate economic process (supply, production, sales and administration of logistics processes), for which accounts are provided. If it is not possible to refer to a particular process, then we use a separate account 29 "Logistics costs", from which then (after the selection of the distribution base) a redistribution of logistics costs is carried out.

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