

LOGISTICS MANAGEMENT IN INCREASING THE EFFICIENCY OF THE DEVELOPMENT OF TRANSPORT CONSTRUCTION ENTERPRISES

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Abstract. *The authors of the article proposed an innovative way to solve the current problem - the development of measures to increase the economic efficiency of the functioning of transport construction enterprises due to the improvement of cost calculation methods, improvement of cost and revenue calculation methods. A secretly essential reserve for the rational reduction of the cost of reproduction of objects of the infrastructure complex of railway transport is the use of modern logistics management tools. The purpose of the article is the development of logistics methods with the help of modern management concepts, which will allow in the future, with the help of global experience in managing the efficiency of transport processes, to increase the economic efficiency of the functioning of transport construction enterprises and will allow to improve the functioning of all elements of the transport component of railway transport. The methodology of this study includes the following involved methods: empirical research (comparison, observation); theoretical research (rational transition from abstract to concrete); general scientific methods (abstraction and concretization, induction and deduction, analogy), analysis and synthesis, etc. The urgency of solving the scientific problem defined in the article is as follows: today's difficult economic conditions require a more rational use of resources, all kinds of savings, on the one hand; on the other hand, the continuous implementation of planned works on the reproduction of infrastructure facilities by transport construction enterprises, as a necessary condition for ensuring the constant movement of railway transport, within the limits of the planned routes in terms of time and directions. Based on the results of the study, the following was obtained: a method of rationally reducing the cost of operation of transport construction enterprises due to the use of progressive methods of logistics management. The originality and practical value of the research lies in the fact that the article systematizes the existing directions of economic justification, taking into account the specific features of the functioning of transport construction objects. The conclusions of the study are as follows: in order to ensure the requirements for the reliable implementation of the transport process, it is necessary to carry out timely repair and current technical works of railway infrastructure objects, taking into account the reduction of specific operating costs and the improvement of the quality of reproduction of the work of transport companies. The results of the conducted research can be useful for various enterprises of JSC "Ukrzaliznytsia", which according to their functional duties must perform timely work on the reproduction of infrastructure objects, maintaining them in a constantly working condition.*
Key words: *logistics management, railway transport, infrastructure objects, development, reproduction, transport construction enterprise, cost price, economic efficiency, organizational and economic mechanism.*

ЛОГІСТИЧНИЙ МЕНЕДЖМЕНТ В ПІДВИЩЕННІ ЕФЕКТИВНОСТІ РОЗВИТКУ ПІДПРИЄМСТВ ТРАНСПОРТНОГО БУДІВНИЦТВА

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Анотація. Авторами статті запропоновано інноваційний спосіб вирішення актуальної проблеми – розробка заходів з підвищення економічної ефективності функціонування підприємств транспортного будівництва за рахунок вдосконалення методів розрахунку собівартості, вдосконалення методів калькулювання витратної та дохідної частини. Вкрито суттєвий резерв раціонального зниження собівартості відтворення об'єктів інфраструктурного комплексу залізничного транспорту – застосування сучасного інструментарію логістичного менеджменту. Метою статті є розробка методів логістики за допомогою сучасних концепцій менеджменту, які дозволять у майбутньому за допомогою світового досвіду управління ефективністю транспортних процесів підвищити економічну ефективність функціонування підприємств транспортного будівництва та дозволить покращити функціонування всіх елементів транспортної складової залізничного транспорту. Методологія даного дослідження містить в собі такі залучені методи: емпіричне дослідження (порівняння, спостереження); теоретичне дослідження (раціональний перехід від абстрактного до конкретного); загальнонаукові методи (абстрагування й конкретизація, індукція та дедукція, аналогія), аналізу та синтезу, та інші. Актуальність вирішення наукової проблеми, що визначена у статті, полягає в такому: скрутні економічні умови сьогодення вимагають більш раціонального використання ресурсів, по всьому заощадження, з одного боку; з іншого, -безперервне виконання запланованих робіт з відтворення інфраструктурних об'єктів підприємствами транспортного будівництва, як необхідна умова забезпечення постійного руху залізничного транспорту, у межах запланованих за часом і напрямками маршрутів. За результатами дослідження отримано: методика раціонального зниження собівартості функціонування підприємств транспортного будівництва за рахунок застосування прогресивних методів логістичного менеджменту. Оригінальність і практична цінність дослідження полягає в тому, що у статті систематизовано наявні напрямки економічного обґрунтування з урахуванням специфічних особливостей функціонування об'єктів транспортного будівництва. Висновки дослідження наступні: для забезпечення вимог до надійного здійснення транспортного процесу необхідно своєчасно проводити ремонтні та поточні технічні роботи об'єктів залізничної інфраструктури з урахуванням зниження питомих експлуатаційних витрат та підвищення якості відтворення роботи транспортних компаній. Результати проведеного дослідження можуть бути корисними для різних підприємств АТ «Укрзалізниця», які за функціональними обов'язками мають виконувати своєчасно роботи з відтворення об'єктів інфраструктури, підтримання їх у постійно робочому стані.
Ключові слова: логістичний менеджмент, залізничний транспорт, об'єкти інфраструктури, розвиток, відтворення, підприємство транспортного будівництва, собівартість, економічна ефективність, організаційно-економічний механізм.

JEL Classification: J230.

Introduction. The track management strategy in modern conditions is aimed at reducing specific operating costs and improving the quality of track repair and construction works.

Pricing policy in the economy of track and construction is the process of setting prices for individual equipment and construction products as a whole based on standards, taking into account the dynamics of changes in the most important price factors.

Literature review, shortcomings and problem statement. A significant step in solving a difficult issue - increasing the economic efficiency of the functioning of transport construction enterprises in today's hidden economic conditions was made thanks to the works of modern domestic scientists - M.I. Mishchenko [3, 8, 9, 10], A.O. Bezugliy [1], Yu.M. Bibik [4], V.V. Bobyl [5].

Author L.V. Martsenyuk, in his works [8, 9, 10] provides an opportunity to evaluate the attraction of investments in various spheres of activity of railway transport, taking into account the level of validity, including restoration measures of infrastructure facilities; M.S. Bashmakov [3], A. V. Kuzmenko [6], I. O. Lyuty [7], O. V. Savchenko [11] propose to improve the existing system of tariff formation for the performance of various types of work, as well as in the field of reproduction activities, because it is a hidden factor of increasing motivation for various types of business entities. In the works of I.V. Berezy [2, 3] covertly addressed the problem of the efficiency of the functioning of transport construction enterprises, proposed several alternative scientific ways of

improving their situation and alternative ways of improving their development. Author A. V. Mysnik [11], based on the European experience of tariff formation, reveals international opportunities for attracting transport construction enterprises, harmonizing technical, technological, economic parameters with national standards. Scientist N.S. Chernova [2, 8, 9] actually provides ways to improve the activities of such enterprises through the study of world experience in solving similar issues with the implementation of a mechanism of specific adaptation to the Ukrainian economic formation. In the work of the authors I. O. Khomenko, V. M. Gurnak, and L. M. Volynets [12], a mechanism for forming priority directions for increasing the financial stability of transport infrastructure enterprises of Ukraine is provided.

Aim and methodology of research. On the railways of Ukraine, the technological tradition of reproducing activity with infrastructure objects in the "window" is preserved. Currently, both technologies are used for the production of reproduction activities on the railways of Ukraine in the "window" and in the area closed to train traffic. Given the large number of factors that affect the cost of using a certain technology for the production of works on the reproduction of infrastructure objects, their comparative assessment is necessary to choose the most effective technology.

The analysis of the normative system of technical operation of railway transport infrastructure objects and its relationship with the methodology of financial support of project activities in JSC "Ukrzaliznytsia" allows us to conclude that the content of technological standards and the economic evaluation of the same processes do not fully meet the requirements of the law. correct match Methodically, the normative approach to the functioning of objects and their budgeting dominates. This was due to the need to include the railway system in the general methodology of the planned economy. In the conditions of the market and the economic isolation of production units (primarily due to the structural reform of JSC "Ukrzaliznytsia"), the issues of economic analysis of objects play not only a secondary role, but are part of the strategy of JSC "UZ"'s contribution to the growth of capitalization and improvement of its own activity indicators. Under such conditions, the problem of profitability should be presented as a purposeful and methodically integrated part of all stages of project implementation. This means that the implementation of indicators of economic efficiency in the field of repair and operation of the track complex when choosing options for creating works, budgeting and cost management within the framework of the project management method is an urgent scientific task.

The purpose of this work is the development of logistics methods with the help of modern management concepts, which will allow in the future, with the help of global experience in managing the efficiency of transport processes, to improve the economic efficiency of the functioning of transport construction enterprises and will allow to improve the functioning of all elements of the transport component of railway transport.

The main material research. Production and cost estimates must take into account the achievement of scientific and technical progress, the efficiency of the use of production capacities, the reduction of the material intensity of products, the improvement of labor productivity, quality repair and the improvement of the efficiency of the repaired equipment.

To increase the efficiency of the work of transport construction organizations during the reconstruction and repair of infrastructure facilities, it is of great importance to work with the maximum possible throughput in closed traffic when performing the specified works, provided that the continuity of the transport process is ensured.

In the railway movement of European countries, reproduction works are carried out using the technology of sections closed to train traffic. This is due to the need to attract heavy construction equipment from transport contractors and perform a wide range of works, as well as the possibility of transporting goods and people in alternative directions (often detours) in connection with the developed railway network.

In order to compare the technologies of reproductive activity, it is necessary to develop a methodology that would establish the order, as part of the developed projects of reconstruction and repair of infrastructure objects, an economically expedient technological order in the organization of the annual production of works.

Before the creation of vertically integrated branches in JSC "UZ", the railway was the sole coordinator of the entire technological process in its territory, an economic unit that included all linear divisions (stations, locomotive and wagon depots, track distances, signaling equipment, centralization and blocking, etc.). The structural reform of management carried out at JSC "UZ" created new conditions, when the technological process will remain horizontal, and costs will be both planned and accounted for by vertically integrated branches. In the new conditions, it is necessary to create additional cost management tools.

In the medium and long-term perspective, one of the main directions of the development of JSC "UZ" is the optimization of the expenditure base and thereby obtaining additional opportunities for the further development of JSC "UZ".

Cost management at JSC "UZ" is a process of financial planning, control and analysis of income and expenses, financial and material flows within the financial and economic activities of JSC "UZ" at all levels of management, aimed at achieving target indicators. main performance indicators of JSC "UZ" The main goal of the management system of economic and financial resources is to increase the efficiency of their use.

The main goal of rail transport cost management at the current stage is the optimization of resource management in JSC "UZ" to ensure the financial profitability of certain types of activities, which in the end should contribute to increasing the financial stability of JSC "UZ" as a whole.

The economic system of JSC "UZ" is a system of forms and methods of distribution and use of funds of JSC "UZ", where revenues are redistributed through the budget system. Budgeting allows you to justify the financial expediency of any type of activity, to choose priority directions for further development, to make informed decisions about where it is appropriate to invest financial resources in the first place, to determine economic efficiency.

To date, JSC "UZ" operates the Concept of implementation of a typical target budget of costs for production activities (hereinafter referred to as the "Concept"), which establishes general principles and the procedure for establishing branches of JSC "UZ" and their structural distribution of standard target budgets for production operating costs.

The implementation of the concept is necessary to achieve the maximization of the economic result from transport activities using standards for determining costs at the minimum permissible technical and technological level. The purpose of implementing the concept is to improve the management of cost factors for transport operations. The implementation of target cost budgets is a necessary condition for the implementation of process-oriented cost management.

The limit of expenses in general for JSC "UZ" is determined on the basis of the parameters of the production budget (primarily the growth of transportation), taking into account the indexation of tariffs, inflation, the share of dependent expenses, the existing base of the previous period. and other parameters.

This approach is determined by the method of calculating the level of economically justified costs and regulatory profit, which are taken into account when forming an economically justified indicator of the current level of tariffs, fees and charges for freight rail transportation.

The dependence of the cost budget on the production budget is due to the dependence of labor, material, and therefore financial costs on the volume of production.

In this regard, at the level of structural units of the branch, indicators for the production budget are laid out in meters by cost items and production operations, target parameters for the cost budget - in costs, respectively, by goods and production operations.

The link between counters of production operations and their costs should be resource consumption norms and price indicators.

The budget of regulatory target costs is a tool for formalizing the relationship between: target parameters of production budgets and costs; production plans (by establishments); resource consumption prices; price indicators; non-standardized direct and indirect costs.

The formation of the target budget of expenses includes the distribution of regulatory expenses related to the implementation of: operational labor standards, traction and locomotive personnel, performance of works on public and non-public tracks; Norms of idle towing of vehicles during scheduled repairs and maintenance; declared periodicity of repair works; Standards for the production of rolling stock and mechanisms for transport construction enterprises; fixed train passage time and fencing of the workplace; rules for maintenance of fixed assets; resource consumption norms (time norms, material and technical expenses, as well as fuel and energy resources), etc.

In connection with the detection of non-productive losses and costs that can be optimized, it is necessary to adjust the parameters of the target budget at the planning stage.

The concept is part of the work carried out at JSC "UZ" on the introduction of a process approach to cost management, as well as part of measures to integrate the budget management system and the estimate-normative system (orders).

Another important aspect of cost management is the correct distribution of financial responsibility between departments, organization of the process of developing, coordinating and approving budgets.

At JSC "UZ" the budget management system is built on the basis of the organizational and functional structure of JSC "UZ", which provides for the allocation of centers of financial

responsibility, the allocation of objects responsible for all financial results and their functional purpose. tasks include leading supervision of the preparation of the business plan and the movement of material and financial resources.

Financial planning determines the ways and means of achieving the financial goals of JSC "UZ". The main goal of financial planning is to provide financial resources for reproductive processes. Financial planning in JSC "UZ" is related to the planning of business activities.

In the practice of economic planning, several methods are used: the balance method, based on production and economic factors, the modeling method, and the regulatory method.

The balance sheet method is the most common. It is considered one of the most important planning methods. The algorithm for its use assumes balanced indicators. Accounts, thus, link the available financial resources and the real need for them. Its essence consists in drawing up various balances and their accounts, for example, the balance between income and expenses, the accounting balance, the balance of the cash register, and others.

The method of planning based on production and economic factors is designed to take into account the influence of internal and external factors that change production and economic indicators. The calculation is based on basic key indicators (sales volume, expenses, cost price, etc.) and factors that affect them.

Research results. Methods using economic-mathematical modeling are based on the construction of economic-mathematical models that reflect the relationship between economic indicators and the main factors affecting them. Basically, it should describe processes according to functional dependencies - in the form of an explicit function of one or more variables, in a parametric form (a special case in a linear environment - refined standards), in a matrix structure for optimization problems. This group of methods is characterized by a rather high isomorphism to real processes in the trace complex, but is practically not formalized. Given the significant size of JSC "UZ" and the dispersion of the qualification level of employees, these methods will remain outside the scope of operational application due to the complexity of calculation procedures.

The normative method consists in the fact that a whole system of norms and norms for the use of resources for JSC "UZ" is used in planning (norms of material intensity, norms of production and maintenance, norms of labor intensity, norms of use of machines and equipment, duration of the production cycle, norms of fractions). The use of this method is optimal when JSC "UZ" has a comprehensive and effective regulatory framework.

Conclusions. In order to ensure the requirements for the reliable implementation of the transport process, it is necessary to carry out repairs and current technical works of railway infrastructure facilities in a timely manner, taking into account the reduction of specific operating costs and the improvement of the quality of reproduction of the work performed by transport companies.

Список літератури

1. Безуглий А. О., Бельська О. Л., Бібик Ю. М., Ракович І. В. Нормативне забезпечення запровадження довгострокових контрактів на експлуатаційне утримання автомобільних доріг для забезпечення їх експлуатаційного стану. *Дороги і мости*. 2020. Вип. 22. С. 8-19.
2. Bereza I., Bashmakov, M., Chernova, N. Economic conditions for improving the adaptability of transport construction enterprises to improve their productivity. *Socio-economic research bulletin*. Odesa: Odesa National Economic University. 2022. № 3-4 (82-83). С. 9-18.
3. Береза І.В., Міщенко М.І. Модель розрахунку величини плати за доступ до об'єктів міської пасажирської інфраструктури з урахуванням участі підприємств транспортного будівництва у процесах її розвитку. *Науковий вісник Одеського національного економічного університету. Науки: економіка, політологія, історія*. 2018. № 11 (263). С. 30-44.
4. Бибык Ю. Н. Особенности системы ценообразования в дорожном строительстве Украины. *Новая экономика*. 2019. №2. С. 105-107
5. Бобиль В. В., Дехтяр С. С. Специфіка функціонування підприємств транспорту в умовах фінансової нестабільності. *Ефективна економіка*. 2022. № 5. URL: <http://www.economy.nauka.com.ua/?op=1&z=10273> (дата звернення: 06.03.2023). DOI: 10.32702/2307-2105-2022.5.4.
6. Кузьменко А. В., Харченко В. В. Ціна як економічна категорія: порядок встановлення та методи ціноутворення в умовах сучасної ринкової економіки. *Економіка і суспільство*. 2017. Вип. 13. С. 547-552/
7. Лютий І. О., Ювженко Н. М. Аналіз системи фінансування дорожньої інфраструктури України. *Наукові праці НДФІ*. 2019. Вип. 3. С. 66-75.
8. Марценюк Л. В., Міщенко М. І., Чернова Н. С. Визначення доцільності залучення

інвестицій на концесійних засадах у залізничний транспорт України. Економіка і держава. 2020. № 9. С. 4–11. DOI: 10.32702/2306-6806.2020.9.4

9. Міщенко М. І., Марценюк Л. В., Чернова Н. С., Гріненко М. О. Теоретичні підходи до управління економічною безпекою транспортних підприємств у сучасних умовах. Економіка і держава. 2020. № 11. С. 35–40. DOI: 10.32702/2306-6806.2020.11.35.

10. Міщенко М. І., Марценюк Л. В., Миснік А. В. Європейський досвід тарифоутворення на вантажні перевезення як інструмент фінансової безпеки залізниць. Ефективна економіка. 2020. № 10. URL: <http://www.economy.nayka.com.ua/?op=1&z=8275>. DOI: 10.32702/2307-2105-2020.10.7

11. Савченко О. В., Марцінко Д. В. Аналіз методів ціноутворення та перспектив їх застосування. Вісник Хмельницького національного університету. Економічні науки. 2018. № 4. С. 304-308.

12. Хоменко І. О., Гурнак В. М., Волинець Л. М. Пріоритетні напрямки підвищення фінансової стійкості підприємств транспортної інфраструктури України. Фінансові дослідження. 2018. № 1 (4). URL: <http://fr.stu.cn.ua/tmp/pdf/110.pdf>

References

1. Bezugliy, A. O., Belska, O. L., Bibik, Yu. M., Rakovich, I. B. (2020). Regulatory security for the provision of long-term contracts for the operation of motor roads for the security of their operational camp. *Dorohy i mosty*, 22, 8-19. [In Ukrainian].

2. Bereza, I., Bashmakov, M., Chernova, N. (2022). Economic conditions for improving the adaptability of transport construction enterprises to improve their productivity. *Socio-economic research bulletin*, № 3-4 (82-83), С. 9-18.

3. Bereza, I.V., Mishchenko, M.I. (2018). A model for calculating the amount of fees for access to city passenger infrastructure facilities taking into account the participation of transport construction enterprises in the processes of its development. *Naukovyy visnyk Odes'koho natsional'noho ekonomichnoho universytetu. Nauky: ekonomika, politolohiya, istoriya*, 11 (263), P. 30-44. [In Ukrainian].

4. Bibyk Yu. N. (2019). Features of the pricing system in road construction in Ukraine. *Novaya ekonomika*, 2, 105-107.

5. Bobil, V. V., Dekhtyar, S. S. (2022). The specifics of the functioning of transport enterprises in the minds of financial instability. *Efektivna ekonomika*, 5. Retrieved from <http://www.economy.nayka.com.ua/?op=1&z=10273>. DOI: 10.32702/2307-2105-2022.5.4. [In Ukrainian].

6. Kuzmenko, A. V., Kharchenko, V. V. (2017). Price as an economic category: the procedure for establishing that method of pricing in the minds of the current market economy. *Ekonomika i suspil'stvo*, 13, 547-552. [In Ukrainian].

7. Lyuty, I. O., Yuvzhenko, N. M. (2019). Analysis of the financial system of the road infrastructure in Ukraine. *Naukovi pratsi NDFI*, 3, 66-75. [In Ukrainian].

8. Martsenyuk, L. V., Mishchenko, M. I., Chernova, N. S. (2020). Determination of the possible value of obtaining investments in concession ambushes for railway transport in Ukraine. *Ekonomika ta derzhava*, 9, P. 4–11. DOI: 10.32702/2306-6806.2020.9.4. [In Ukrainian].

9. Mishchenko, M. I., Martsenyuk, L. V., Chernova, N. S., Grinenko, & M. O. (2020). Theoretical approaches to the management of economic security of transport enterprises in modern minds. *Ekonomika ta derzhava*, 11, 35–40. DOI: 10.32702/2306-6806.2020.11.35. [In Ukrainian].

10. Mishchenko, M.I., Martsenyuk, L.V., Misnik, A.V. (2020). European experience of freight tariff formation as an instrument for financial security of railways. *Efektivna ekonomika*, 10. Retrieved from <http://www.economy.nayka.com.ua/?op=1&z=8275>. DOI: 10.32702/2307-2105-2020.10.7. [In Ukrainian].

11. Savchenko, O. V., Marcinko, D. V. (2018). Analysis of pricing methods and prospects for their application. *Visnyk Khmel'nyts'koho natsional'noho universytetu. Ekonomichni nauky*, 4, 304-308. [In Ukrainian].

12. Khomenko, I. O., Gurnak, V. M., Volynets, L. M. (2018). Priority directions for increasing the financial stability of transport infrastructure enterprises of Ukraine. *Finansovi doslidzhennya*, 1 (4). Retrieved from <http://fr.stu.cn.ua/tmp/pdf/110.pdf> [In Ukrainian].