

MULTIMODAL TRANSPORTATION MANAGEMENT OF ECO-ORIENTED ENTERPRISES

Shtyk Yu.

National Aviation University

Abstract. *Over the past decade, globalization has increased and opportunities for international trade have expanded. This has led to an increase in the volume of transportation of goods and services, which requires more effective management methods and strategies. Multimodal transport management is a key factor in solving these problems and providing optimal solutions in the field of logistics and transport.*

Multimodal transportation management players play an important role in the modern logistics and transportation industry. Innovations in this field, including information technology and digital solutions, allow companies to optimize costs and increase the reliability of transportation. In the last decade, the world community has increasingly paid attention to environmental sustainability and responsibility. This has led to a growing interest in eco-oriented businesses that take environmental aspects into account in all aspects of their operations, including logistics and transportation. Management of multimodal transportation in eco-oriented enterprises becomes an element of the strategy of sustainable development, which requires an integrated approach to reducing the carbon footprint and minimizing the negative impact on the environment.

Multimodal transportation is a system of transporting goods or passengers that uses two or more modes of transportation, such as cars, trains, planes, ships, etc. In this system, a cargo or passenger is moved from a point of origin to a destination by means of various modes of transport, usually without the need to reload the cargo or repack the passenger.

In the conditions of growing environmental awareness and the need to reduce the carbon footprint, companies around the world are paying attention to green initiatives, including eco-oriented multimodal transportation. Managing multimodal transportation in such enterprises requires innovative approaches and strategies to ensure efficiency and environmental sustainability at all stages of the logistics chain.

The integration of environmental aspects into multimodal transportation includes:

1. Use of environmentally friendly types of transport: eco-oriented enterprises actively implement electric, hybrid and other low-carbon transport technologies, which reduces the negative impact on the environment.

2. Efficient route planning : Optimizing routes and choosing environmentally friendly alternatives help reduce carbon emissions and reduce fuel consumption.

3. Use of new technologies: the introduction of new emissions monitoring systems, the use of efficient traffic flow management systems, and the improvement of the energy efficiency management system contribute to reducing the negative impact on the environment.

Environmentally oriented multimodal transportation management strategies can be formed on the basis of such aspects as Cooperation with environmentally conscious partners and suppliers, Stimulation of green initiatives of employees, Investments in research and development of green technologies. The choice of suppliers that support green standards contributes to the construction of an ecologically clean logistics chain. Introducing incentives for employees who actively promote and implement environmental practices eco-oriented enterprises, thanks to the creation of an environmentally conscious corporate culture. Funding and research for the development of green technologies and infrastructure thanks to the increase in the production capacity of green transport.

Advantages of eco-oriented management of multimodal transportation:

- improvement of reputation and brand;
- cost savings;
- steadfastness and responsibility.

Green initiatives contribute to increasing consumer confidence and increasing the competitiveness of the enterprise. Efficient use of resources and optimization of transportation processes reduce fuel and energy costs. Contributing to the preservation of the environment through the creation of a sustainable and relevant business strategy.

Information technologies and digital interchanges play an important role in improving multimodal transportation. Technologies such as Global Positioning Systems (GPS), sensors, cloud-based solutions, and smart analytics tools allow for improved monitoring, control, and optimization of logistics and transportation processes. Modern GPS systems provide reporting information about cargo at various stages of transportation. This is a free program for optimal routes and avoiding delays. Sensors installed on cargo can monitor shipping conditions such as temperature, humidity, and pressure. This is important for goods that require special storage conditions. The processing of large amounts of data in real time allows the detection

and resolution of problems during transport, such as traffic jams or delays at borders.

The problems of managing multimodal transport eco-oriented enterprises in Ukraine are primarily focused on the lack of transporting goods by sea due to military events. There are many advantages, problems and challenges associated with managing multimodal transportation include coordination, legal issues, security and risks. Cooperation between larger modes of transport can be difficult, especially when different standards and regulations apply. Differences in legislation and customs regulations in different countries can make cross-border transportation difficult. Different modes of transport have different levels of safety and this can affect the risks of transportation.

Conclusions

Multimodal transportation eco-oriented enterprises allows more efficient use of different modes of transportation to reduce transportation time, reduce costs, and improve the overall efficiency of the transportation process. Multimodal transportation eco-oriented enterprises is an important part of the modern logistics system, especially for large companies with global operations. This approach also helps to reduce the harmful impact on the environment by reducing the number of idling vehicles. Management of multimodal transportation at eco-oriented enterprises requires a deep analysis of environmental challenges and the search for innovative approaches.

References

1. Holguin-Veras, J., Hodge, S.D., Jara-Diaz, S.R. (2017). *Introduction to the special issue on environmental sustainability in transport and logistics. Transportation Research Part D: Transport and Environment. Vol. 52. pp. 387-390.*
2. Lu, C.S, Lin, C.W (2019). *A new method of evaluating the efficiency of ecological logistics in the aviation industry. Journal of Cleaner Production. Vol. 228. pp.1319-1330.*
3. Dekker, R., Blumhof, J.M., and Mallidis, I. (2012). *Operations Research for Green Logistics - A Review of Aspects, Issues, Contributions and Challenges. European Journal of Operations Research. Vol. 219(3). pp. 671-679.*
4. *United Nations Environment Program (UNEP). (2018). Sustainable Transport: A Guide for Policymakers in Developing Cities. URL: <https://www.unenvironment.org/resources/report/sustainable-transport-sourcebook-policy-makers-developing-cities>*