

ORGANIZATIONAL CONTEXT OF ENSURING EFFICIENCY OF MARKETING MANAGEMENT IN INNOVATIVE DEVELOPMENT OF RAILWAY TRANSPORT

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Abstract. The current stage of development of railway transport necessitates the integration of innovative technologies to ensure the competitiveness and efficiency of the industry's enterprises. The relevance of the problem is due to the growing need to improve marketing strategies that promote the introduction of new technologies and optimise management processes. The purpose of the study is to develop a concept of marketing management of innovative development of railway transport, and the object is the system of management of innovative activities of railway sector enterprises. We applied a comprehensive approach, including analysis of market trends, customer segmentation, forecasting of technological development and functional analysis of management processes. The methodological basis of the study is based on a systematic analysis of statistical data, mathematical models and expert assessments, which allowed us to obtain an objective characterisation of the impact of innovative solutions on the economic performance of enterprises. The main obstacles to the innovative development Ukrainian railway transport enterprises have been identified, in particular, the lack funds for the implementation of innovations, the loss scientific research potential and the ineffectiveness the system for stimulating the innovative development of railway transport enterprises. Since the improvement competitive advantages and recognition of market opportunities requires the generation information from various market operators, the expediency implementing the concept marketing management the innovative development railway transport is argued. It has been found that the marketing management innovative development ensures the system integration the complete innovation cycle based on the forecasting technological development and future needs of consumers for the creation innovations and their distribution on the market. The tasks and principles the concept marketing management innovative development of enterprises are revealed, its functions are established, namely coordination, planning, controlling, stimulating, prognostic, communication, informational, organizational, research, practical. In order to increase the effectiveness innovative activities, it is proposed to form a competence-marketing agency for the innovative development of railway transport, the structure which includes analytical, educational-knowledge, communication-coordinating and project sectors.

Keywords: innovative development, marketing management, efficiency, organizational structure, railway transport.

JEL Classification: M11, M31, R41

Formulas: 0; **fig.:** 2; **table:** 0; **bibl.:** 17

Introduction. Problem statement. Innovation is the main means of ensuring the competitiveness and sustainability of railway transport enterprises in the market. Today, the development of information and telecommunication systems, high-speed railway transportation technologies, globalisation and optimisation of logistics chains with the integration of various modes of transport create preconditions and opportunities for a fundamental innovative transformation of railway transport. At the same time, there is a need to create a more flexible and integrated system of innovation management, a new economic mechanism focused on the development of promising, competitive products and technologies, restructuring of organisational structures, redistribution of functions, and a change in management style, which will help stimulate the creation and implementation of innovations and ensure end-to-end management of the innovation process from the emergence of an idea to its dissemination. Marketing plays an important role in ensuring the effectiveness of innovation development in the current economic environment, and its role in innovation has recently been rethought, as information from customers and cooperation with them are key issues of open innovation, and enterprises can benefit greatly from closer integration and interaction between the research and development and marketing functions, so the topic of organising marketing management of innovative development of railway transport is relevant and timely.

Literature review. Theoretical and practical aspects of the innovative development of railway transport enterprises have been widely studied by researchers. A number of scientific publications have addressed this issue, including the works of scholars such as Barash & Charkina (2017), Dykan & Volovelska (2019), Kirdina et al. (2022), Korin (2012), Obrych et al. (2022), and Solomnikov (2017), Martseniuk et al. (2021), Galushko et al. (2024). The significant role of marketing in the innovative activity of railway transport is highlighted by Korin (2012) and Solomnikov (2017), who propose the establishment of innovation centres with marketing departments aimed at fostering innovation by monitoring and forecasting the market, studying competitive positions, protecting intellectual property rights, commercialising scientific and technological outputs, and promoting innovative products and technologies.

Along with domestic research, foreign scholars pay considerable attention to assessing the role of marketing innovations in transport systems, in particular in the railway sector. One example is an article published in 2020 (Kozłowski et al., 2020). In it, Polish researchers, analysing data from the Community Innovation Survey (CIS), determined that marketing innovations are the most common type of non-technological innovation. At the same time, the authors state that the overall level of innovation remains low due to historical monopolies and the lack of effective market incentives, which, in turn, hinders the implementation of active marketing strategies and reduces the competitiveness of enterprises.

Global trends in the digital transformation of railway transport are discussed in a study published in 2023 (Li et al., 2023). It emphasises the relevance of artificial intelligence, big data, and the Internet of Things in improving the efficiency of railway companies. However, the marketing component is only partially considered, primarily in the context of passenger information, which can be seen as part of marketing

communications.

A 2021 study on policy responses to innovation in railway sector workplaces highlights the importance of organisational innovation for enhancing the competitiveness of small and medium-sized enterprises. However, marketing aspects are not extensively explored (Carranza et al., 2021).

Another study, published in 2019, analyses passenger preferences regarding the implementation of innovations such as automatic compensation for delays and pre-ordering of special services. These marketing-oriented innovations were highly appreciated by consumers, confirming the importance of developing customer-centric marketing strategies (Oliveira et al., 2019).

New technological solutions, such as the concept of digital twin trains, discussed in a 2024 article in the *European Transport Research Review*, demonstrate significant potential for improving railway system efficiency. However, this study also only briefly touches upon marketing aspects, focusing primarily on technical and organisational changes (Sarp et al., 2024).

As a result of the literature review, several contradictions and gaps can be identified. On the one hand, the focus is predominantly on technological and organisational innovations, with an underestimation of the marketing aspect, even though the latter could be a crucial factor in integrating new technologies and services into the market. On the other hand, different countries face significant regulatory and monopolistic barriers that hinder the formation of proactive marketing behaviour. Therefore, further research is needed to develop integrated models of marketing management that consider global trends and the specificities of different transport markets.

Thus, the synthesis of theoretical and practical research suggests that ensuring the effectiveness of innovative development in railway transport remains a relevant issue requiring further in-depth studies, particularly in terms of combining marketing and technological innovations. A more thorough examination of the efficiency of organising innovative activities in railway transport enterprises is needed, taking into account the challenges of proactive market behaviour.

Aims. The present study aims to develop and substantiate the conceptual foundations of marketing management in the innovative development of railway transport, thereby ensuring enhanced competitiveness and sustainable growth of enterprises in the sector. In order to achieve this, the study focuses on identifying existing barriers to innovation, designing an organisational structure for marketing management, and describing its functional elements.

Methodology. The research employed a range of scientific methods (analysis, synthesis, comparison, generalisation) to evaluate the market and the innovation environment, together with expert assessment methods and functional analysis to determine the impact of marketing tools on innovation management efficiency. The theoretical basis for the study was provided by the concepts of innovation marketing and proactive development, enabling a systemic view of integrating market-oriented approaches into the processes of creating and commercialising innovations in the railway sector. Commonly known statistical procedures in economic research were applied without additional elaboration.

Results. Today, rail transport is undergoing a transformation thanks to a number of technological advances that are improving efficiency and service quality. Innovative breakthroughs, from dynamic capacity planning and management to specialised freight services, are redefining the landscape of rail logistics and transport in general.

A description of the trends in innovative modernisation of railway transport in the world is shown in Fig. 2.

In general, rail transport is reinventing itself in an attempt to erase its main disadvantages: an inflexible network and very high operating costs. To do this, it can rely on the rapid development of new energy sources, new uses and high-tech digital infrastructure. The industry is also using the Internet of Things and artificial intelligence to develop smart railway systems. These systems increase efficiency, improve safety and provide real-time data analysis for better decision-making and customer service.

The rail industry is witnessing a shift towards sustainable and environmentally friendly solutions, such as the introduction of electric and hydrogen trains. These alternatives significantly reduce carbon emissions compared to traditional diesel engines. Countries such as China, Japan and the European Union are expanding their high-speed rail networks, reducing travel times and competing with air travel for long-distance travel.

It should be stated that the innovative activities of Ukrainian railway transport enterprises yield rather modest results. Alongside the lack of financial resources for implementing innovations and the decline in research and development potential, the inefficiency of the system for fostering innovative development in railway transport enterprises is determined by several market factors. These include the following: the model and mechanisms of innovation activity do not reflect a market-oriented approach; the regulatory framework governing the activities of departments and officials lacks marketing tools for structuring innovation processes; personnel do not possess the necessary competencies for professional engagement in the innovation market and, in practice, also function as active researchers within the scientific subsystem; the criteria and performance indicators fail to capture the specificity and market-driven nature of personnel activities in the innovation sector; and control instruments remain unutilised in analytical marketing activities.

At the same time, it is widely recognised that market orientation serves as a tool for creating and enhancing competitive advantages, while enterprises' efforts towards market orientation, combined with effective organisational measures, improve the efficiency of innovation activities.

To overcome the aforementioned challenges in the innovation-driven development of railway transport enterprises, the search for and selection of promising market opportunities for the implementation of innovation activities should be conducted based on the concept of marketing management. This is because enhancing competitive advantages and identifying market opportunities require the generation of information from various market operators, primarily competitors, customers, and partners.

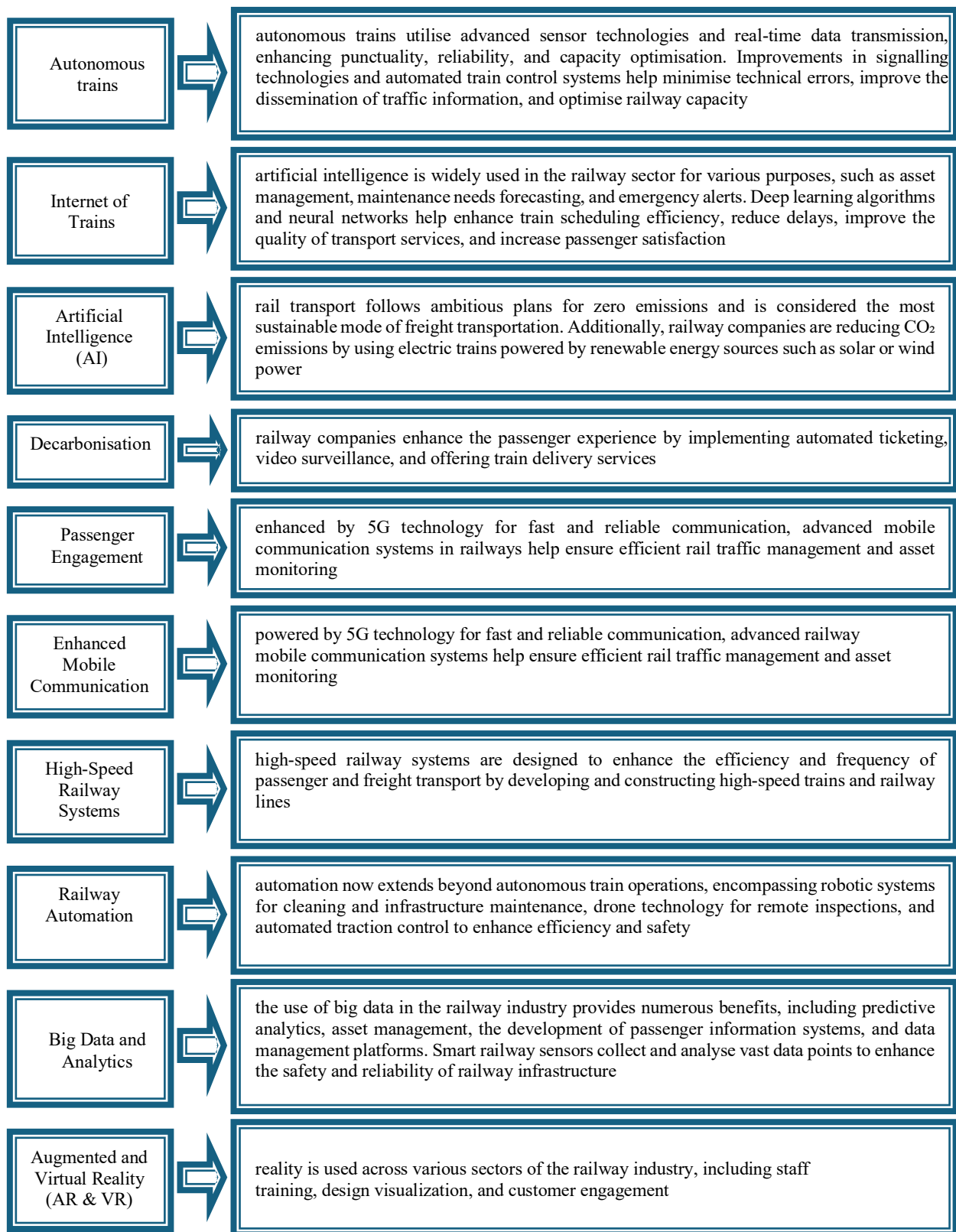


Fig. 1. Characteristics of trends in the innovative modernisation of railway transport

Sources: compiled by the author on the basis of (Startus Insights, 2025)

Scholars define marketing management of enterprises' innovation development as the systematic integration of the full innovation cycle: from studying the market conditions for innovative products, their business planning, implementation, and

promotion, to market diffusion and revenue generation. The implementation of marketing management in innovation development is primarily ensured through the acquisition and analysis of information regarding the state of innovation processes and phenomena, which forms the basis for managing innovation activities.

The key principles of the concept of marketing management for the innovative development of an enterprise include the following (Illiashenko, 2023; Charkina et al., 2022):

- compliance with global scientific and technological development trends;
- alignment with consumer needs and demands;
- focus on capturing a specific share of the innovation market in accordance with the enterprise's long-term objectives;
- orientation towards achieving a final practical and commercial outcome from innovation implementation;
- integration of R&D, operational, and marketing activities into a unified enterprise development management system;
- a long-term orientation that ensures highly efficient economic performance of the enterprise in the long run;
- meeting the needs of potential consumers while simultaneously shaping their demand for innovations.

The primary task of marketing management in the innovative development of an enterprise is to forecast technological advancements and future consumer needs, develop proposals for the creation of innovations, and facilitate their market dissemination (Hryzovs'ka & Romanova, 2018).

The functions of marketing management in the innovative development of an enterprise include:

- coordination function (ensures the coordination of all participants at all stages of the development of an innovative product/service);
- planning function (formulation of tasks for the implementation of specific innovation projects);
- controlling function (ensuring the adequacy of innovation projects and the demand for them);
- stimulating function (popularisation of specific innovations or innovative thinking and behaviour, fostering interest in the formation and practical implementation of innovation projects);
- forecasting function (development of potential changes in the state of objects and spheres of social life due to innovations in the future);
- communication function (conducting PR activities regarding specific innovations and positioning them in public perception);
- Information function (gathering data on markets for innovative products, services, and ideas, considering their supply and demand);
- organisational function (bringing together efforts to implement innovative products/services based on unified rules and procedures for carrying out innovative activities);
- scientific-research function (monitoring of innovation activities and projects);

- practical function (efficient implementation of innovation projects).

The primary function of marketing management in the innovative development of an enterprise is to align consumer needs and expectations with the enterprise's innovative potential and production resources (both internal and external). Marketing management of an enterprise's innovative development is intended to coordinate all activities related to the creation and implementation of new products, the formation of innovation-oriented business processes, and the enhancement of the enterprise's reputation in the field of innovation.

Thus, marketing management of the innovative development of railway transport enterprises can be defined as a set of measures aimed at studying commercial and social aspects associated with the process of innovation creation and commercialisation, as well as projects and programmes. The objective is to ensure the effective application of innovations in line with the needs and requirements of their implementation environment, as well as to optimise managerial decisions in the execution of an innovation programme.

Regarding the implementation of marketing management for the innovative development of railway transport enterprises, the following stages can be distinguished.

At the first stage, the functions of strategic marketing are implemented, specifically conducting marketing research (assessment of market indicators); consumer segmentation and identification of target segments; forecasting sales of innovative transport services; development of functional strategies; and determining the estimated marketing budget for launching an innovative project.

At the second stage, the functions of operational marketing are carried out, including the approval of the main concept of the innovative service and the formation of pricing and communication policies.

At the third stage, the marketing mix measures developed in the second stage are implemented, which include introducing the transport service to the market, execution, and achieving the planned revenue. Marketing support for the innovative product is provided through marketing techniques that allow for the collection of key information about customers, the market, competitors, and the external environment.

Based on the concept of market proactivity in the field of innovation activities within railway transport enterprises, marketing management should be built upon a thorough market study, the outcome of which includes an assessment of market potential and a sales forecast calculation.

The search for and systematisation of knowledge regarding promising market innovations, as well as the innovation receptiveness of key stakeholders, along with the urgent need to apply modern and effective marketing management tools, necessitate the establishment of a specialised organisational structure – a competency-based marketing agency for the innovative development of railway transport. The departments and main functions of this agency are presented in Fig. 2.



Fig. 2. Structure of the Competence-Based Marketing Agency for Innovative Development of Railway Transport

Sources: developed by the author

A significant emphasis in the agency's work is placed on enhancing competence levels, as marketers involved in innovation require the following skills:

- creativity and openness – for generating and implementing new ideas;
- analytical skills – for analysing market trends, customer data, and the effectiveness of marketing strategies;
- technological literacy – for understanding and utilising new marketing technologies and platforms;
- risk tolerance – for being comfortable with experimentation and potential failure;
- customer-centric approach – for focusing on creating value for customers;
- collaboration and communication skills – for effectively working with diverse teams and conveying ideas.

Discussion. The findings indicate that integrating marketing management principles into the innovative development of railway transport can substantially enhance both the competitiveness and sustainability of enterprises. The proposed framework emphasises not only technological but also organisational and market-oriented solutions, echoing the observations by Oliveira et al. (2019) on the importance of incorporating customer feedback mechanisms in transport innovations. The emergence of competence-marketing agencies outlined in this study reflects a strategy aligned with Kozłowski et al. (2020), who stress that the lack of effective market incentives in railway systems hinders active marketing approaches. Moreover, our results showing the need for coordinated, cross-functional involvement of analytical, educational, and communication sectors are consistent with the perspective offered by

Carranza et al. (2021), which underscores that organisational and policy-level support is crucial for ensuring that workplace innovations are both feasible and effective.

However, although we highlight the role of proactive market behaviour, the degree to which regulatory environments and existing monopolistic structures limit its implementation remains partially unresolved. This is similar to the insights from Li et al. (2023), who note that digital transformation in railway systems must go hand in hand with supportive policies to maximise benefits. The emphasis in the literature on AI and Big Data (Sarp et al., 2024) underscores a global push toward digital solutions; yet our study finds that without well-developed marketing strategies, the potential for such technologies to drive genuine market shifts may be curtailed. Taken together, these points suggest that while technological advancements are indispensable, organisational readiness and a robust marketing focus are equally important for leveraging innovation successfully.

Overall, the comparison of our findings with extant studies highlights that marketing management provides an integrative layer, bridging technological capabilities with evolving customer expectations. This aligns with Barash & Charkina (2017), who point to the fundamental necessity of embedding market intelligence into innovation processes. Consequently, the results reaffirm that the adoption of marketing-led strategies is not merely an auxiliary function, but a cornerstone of efficient, future-oriented management for railway transport enterprises.

Conclusions. Implementation of innovative modernisation of railway transport requires generation of information from different market operators in order to forecast technological development and future needs of consumers and develop proposals for creating innovations and their dissemination in the market, which indicates the prospects of introducing the concept of marketing management to intensify the innovative activity of railway transport. Ensuring the efficiency of marketing management of the innovative development of railway transport requires the implementation of organisational changes. The author proposes to form a competence and marketing agency for the innovative development of railway transport, which includes analytical, educational and knowledge, communication and coordination, and project sectors. The competence and marketing agency for innovative development of railway transport offers access to tools and technologies that increase the efficiency of marketing processes and accelerate the development and testing of ideas by offering resources, infrastructure and support services, such as laboratories, mentoring, acceleration programmes, investor relations and access to new technologies.

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