standards; Russian marketplaces should accelerate integration with Belarusian payment systems, including ERIP, and broaden access for Belarusian sellers seeking to reach the Russian market.

Russian marketplaces in Belarus represent an instructive model of cross-border digital business under deep economic integration. The institutional advantages of the EAEU and the Union State, combined with technological and logistical capabilities, sustain their stable market presence. Further development depends on the quality of bilateral regulatory cooperation and the pace of infrastructure harmonisation. The Belarusian experience may serve as a reference for Russian marketplace entry into other EAEU and CIS markets.

REFERENCES:

1. Russian E-Commerce Market 2025. - URL: https://datainsight.ru/ecommerce2025 (date of access: 21.03.2026).

2. Treaty on the Eurasian Economic Union of 29 May 2014. - URL: https://www.eaeunion.org (date of access: 21.03.2026).

3. Sales in Belarus. - URL: https://seller.ozon.ru (date of access: 21.03.2026).

4. How Marketplaces Defeated Retail. 22 September 2025. - URL: https://www.forbes.ru/biznes/546002 (date of access: 28.03.2026).

5. New Routes and Technologies: Logistics in 2025. – URL: https://www.rbc.ru/radio/07/10/2025 (date of access: 28.03.2026).

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OPTIMIZING TRANSIT ROUTES AND CRISIS MANAGEMENT WITH AI IN LOGISTICS

Modern international logistics operates in conditions of high turbulence due to geopolitical conflicts, sanctions regimes, climate change and the volatility of global markets. Traditional supply chain management approaches, based on reactive response and historical data, are underperforming. A key factor in competitiveness is the ability of companies not only to recover from failures, but also to predict their occurrence before they lead to serious consequences.

The purpose of the study is to analyze the mechanisms of using artificial intelligence (AI) for proactive management of international logistics, including crisis forecasting and dynamic optimization of transit routes.

The main part of the work shows that the use of AI technologies in logistics covers a wide range of areas. According to Belarusian researchers, in the Republic of Belarus, which has a developed transport infrastructure, machine learning algorithms are being actively introduced to optimize routes (RUE Belpochta, UE Belzheldozrezervis), demand forecasting (KTUE Minsktrans, BelAvtoTrans LLC) and automation of warehouse processes, which makes it possible to reduce labor costs by 50–70% with a picking accuracy of 99.99% [1, pp. 71–72]. Particular attention is paid to dynamic routing systems that integrate artificial intelligence, big data analysis and satellite positioning to correct the trajectory of movement in real time [2, p. 63–64].

Predictive analytics technologies demonstrate significant potential. The results of using logistic regression to analyze Amazon customer reviews reached an accuracy of 86.75%, which confirms the effectiveness of this method for classification and forecasting [3, p. 418]. In addition, the use of digital twins makes it possible to simulate hundreds of scenarios by integrating sensor data and information on the variability of delivery times [4].

The paper also identifies the main barriers to AI implementation: difficulties in integrating with outdated software, information security threats, staff resistance, and the discrepancy between digital initiatives and the overall business strategy [5, pp. 38–39; 6]. Despite this, the cost-effectiveness of using AI is confirmed by practical examples. At X5 Retail Group, the introduction of AI has reduced product write-offs by 2%, increased revenue by 1% and optimised inventory by 3% [5, p. 38]. Toyota's experience demonstrates that it is possible to prevent product shortages by providing six weeks of early warning of failures [4].

The study confirms that artificial intelligence is becoming a key tool for the transformation of international logistics. In the Republic of Belarus, AI technologies have already proven their effectiveness in optimizing routes, forecasting demand and automating warehouses. Predictive analytics based on logistic regression and digital twins provide highly accurate forecasts and the ability to proactively manage risk. Despite the existing problems of integration and cybersecurity, the economic effect of the implementation of AI (cost reduction, revenue growth, prevention of failures) makes these technologies critical for ensuring the sustainability and competitiveness of supply chains in the face of global turbulence.

REFERENCES:

1. Kurman, E. A. Application of Artificial Intelligence in Transport Logistics in the Republic of Belarus / E. A. Kurman, N. V. Mironchuk // Proceedings of the BNTU Conference. – Minsk, 2025. – P. 71–72. – URL: https://www.elibrary.ru/item.asp?id=82826562 (date of access: 21.03.2026).
2. Korneenko, A. O. Development of a system for optimization and coordination of routes in real time / A. O. Korneenko, I. P. Dralova // Proceedings of the 79th Student Scientific and Practical Conference / Belarusian State University of Transport. – Gomel, 2025. – P. 63–64. – URL: https://www.elibrary.ru/item.asp?id=82826528 (date of access: 21.03.2026).
3. Eljaji, H. Mathematical Models and Algorithms in Logistics: Real-World Applications and AI Impact / H. Eljaji, R. R. Mekuria // ALATOO ACADEMIC STUDIES. – 2024. – № 2. – P. 412–421. – URL: https://www.elibrary.ru/item.asp?id=68549406 (date of access: 20.03.2026).
4. Doshi, A. Beyond resilience: How AI and digital twins are rewriting the rules of supply chain recovery / A. Doshi // Supply Chain Management Review. – 2025. – March/April. – URL: https://www.scmr.com/article/beyond_resilience_how_ai_and_digital_twins_are_rewriting_the_rules_of_suppl (date of access: 22.03.2026).
5. Stoll, E. D. Application of Artificial Intelligence in Solving Actual Problems in Logistics / E. D. Stoll, D. S. Chernikova, E. V. Cherpakova // Conference Proceedings. – Moscow : Russian University of Transport (MIIT), 2025. – № 2 (6). – P. 35–39. – URL: https://www.elibrary.ru/item.asp?id=82407691 (date of access: 21.03.2026).
6. Kozlov, A. S. Top 5 Problems That Artificial Intelligence Can Solve in Logistics / A. S. Kozlov, G. I. Shepelin // Actual Research. – 2021. – № 30 (57). – P. 22–24. – URL: https://apni.ru/article/2722-top-5-problem-kotorie-iskusstvennij-intellekt (date of access: 22.03.2026).