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MODERN APPROACHES TO OPTIMIZING SUPPLY CHAIN MANAGEMENT (SCM) ACTIVITIES IN ORGANIZATIONS

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KEY WORDS: *Technologies in supply chain; Modern Supply Chain Management (SCM; Intelligent Supply Chain Management (SCM); Technological architecture in supply chain*

SUMMARY

The doctoral thesis titled "*Modern approaches to optimizing supply chain management (SCM) activity in organizations*" contributes to the modernization and optimization of supply chain management (SCM) through the integration of emerging technologies. The research identified critical challenges in SCM, such as lack of visibility, data fragmentation, insufficient collaboration, and security vulnerabilities, proposing an innovative IT architecture to address these needs.

The proposed architecture combines technologies such as IoT, RFID, Cloud Computing, Big Data Analytics (BDA), Artificial Intelligence/Machine Learning (AI/ML), and ERP, offering scalable and adaptable solutions. It ensures real-time visibility and traceability, reducing processing times and operational errors, while the integration of Cloud facilitates data centralization and collaboration among partners. Logistic process automation, advanced cybersecurity, and compliance with international regulations complete the proposed structure, supporting the performance and trust of organizations in SCM.

The results demonstrate that integrating emerging technologies enhances operational efficiency, improves demand forecasting, and optimizes resource utilization. The theoretical and practical contributions of the research provide a solid foundation for the gradual implementation of IT solutions in SCM and open new avenues for future research. The main conclusion is that digital transformation in SCM is a strategic necessity, and the proposed architecture offers a solution for addressing contemporary challenges and creating more efficient, resilient, and sustainable supply.