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Problems and Solutions in Logistics: Dmytro Petlenko's Secrets of Process Optimization in Wholesale Business

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A Manager in the Field of Wholesale Trade with a Holistic View of the Industry

Abstract

The article analyzes key problems and solutions in the field of logistics in relation to the wholesale trade sector. The main challenges associated with the management of warehouse operations, transportation and inventory, which affect the efficiency and profitability of the wholesale business, are considered. The purpose of the study is to systematize approaches to optimizing logistics processes based on modern theories of supply chain management and practical experience. The tasks include identifying typical logistics problems in wholesale trade, describing effective methods for solving them, including technological and process improvements, and assessing the strategic benefits of optimization. Practical recommendations for improving the efficiency of logistics are presented, which can be used by managers of wholesale companies to improve operational performance and strengthen competitive positions.

Keywords: *Wholesale Logistics, Process Optimization, Supply Chain Management, Warehouse Logistics, Transport Logistics, Inventory Management, WMS, TMS, Logistics Efficiency.*

In the conditions of high competition and increasing customer demands for speed and quality of service, the efficiency of logistics operations is becoming a critical success factor for wholesale companies. Logistics costs, including the costs of storage, transportation and inventory management, make up a significant part of the operating costs of a wholesale business. Unoptimized processes can lead to increased costs, reduced service levels, errors in deliveries and loss of customers. The relevance of the topic is due to the constant need to find ways to improve the efficiency of logistics functions in order to maintain profitability and competitiveness. This requires an integrated approach that takes into account the interrelation of all logistics operations. The purpose of this article is to analyze the main problems in wholesale logistics and systematize effective approaches and solutions for process optimization, taking into account modern achievements in the field of supply chain management.

Supply chain logistics is defined as the process of planning, executing and controlling the effective and efficient flow and storage of goods, services and related information from the point of origin to the point of consumption in order to meet consumer requirements [2]. In wholesale trade, logistics performs specific functions: consolidation of goods from manufacturers, storage, order picking for retail or industrial customers, organization of delivery. The efficiency of these operations is measured using a set of indicators (KPI), such as logistics cost per unit of goods, order fulfillment time, inventory turnover, order picking accuracy, and timely delivery [4]. Optimization of logistics processes is based on such concepts as lean logistics, aimed at eliminating losses, reengineering business processes, and active implementation of information technology and automation.

Despite the diversity of product categories, wholesale companies often face similar problems in their logistics operations.

Warehouse logistics: Inefficient use of warehouse space and

volumes, slow and labor-intensive processes for receiving, placing and picking goods, high error rates in order picking, difficulties in accurately accounting for balances in real time, insufficient level of operational security.

Transport logistics: Suboptimal planning of delivery routes leading to increased mileage and fuel consumption, low utilization of vehicles (transportation of "air"), delays in delivery due to traffic jams or inefficient organization, lack of means to track goods in transit (insufficient transparency).

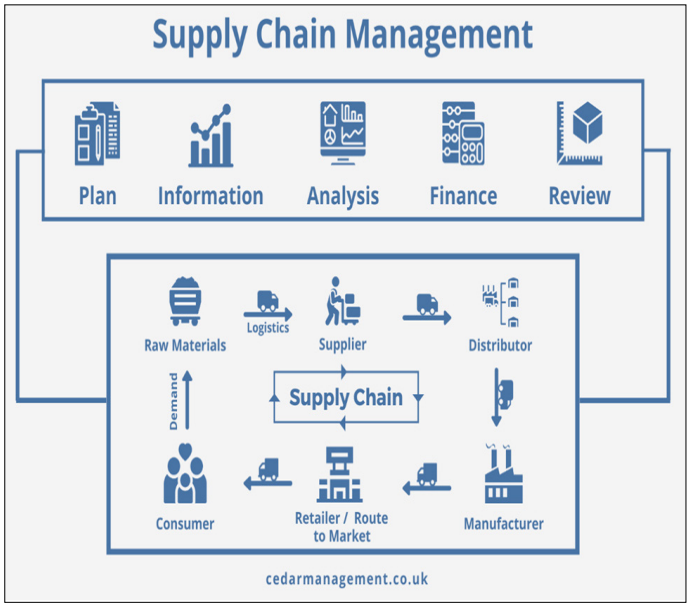
Inventory management: Formation of excess inventory, "freezing" working capital and increasing storage costs and the risk of spoilage or obsolescence of products; or product shortages leading to lost sales and customer dissatisfaction; inaccurate demand forecasting as a cause of inventory imbalances.

Information management: Lack of or weak integration between various information systems (warehouse WMS, transport TMS, corporate ERP), which complicates end-to-end flow management; low quality and untimeliness of data, which hinder the adoption of prompt and informed decisions.

To eliminate the identified problems and improve logistics efficiency, wholesale companies use a set of technological and organizational-process solutions.

Technological Solutions

- Implementation of Warehouse Management Systems (WMS): Automate and optimize the processes of acceptance, placement, selection, assembly and shipment of goods, improve the accuracy of inventory accounting, and allow for the effective management of personnel and equipment [3].
- Implementation of Transport Management Systems (TMS): Provide for the planning of optimal routes, consolidation of goods, selection of carriers, real-time transport monitoring, and management of transport costs.
- Integration of WMS and TMS with a corporate ERP system: Creates a single information space for end-to-end management of orders, inventories and deliveries [1]. Conceptual diagrams of the integration of logistics information systems demonstrate data flows between ERP, WMS and TMS, ensuring coordination and transparency of operations.
- Automatic identification technologies (barcoding, RFID): Accelerate the processes of accounting and tracking goods in the warehouse and in transit. Warehouse automation: Use of conveyor systems, sorters, robotic storage and retrieval systems (AS/RS) to increase productivity and reduce reliance on manual labor.



Process Improvements

- Warehouse topology optimization: Development of an effective product placement scheme (e.g. based on ABC analysis of frequency of requests), warehouse zoning, allocation of zones for different operations (receiving, storage, picking, shipping).
- Application of modern picking methods: Route picking, wave, zone, batch picking to reduce personnel movements.
- Implementation of lean manufacturing principles: Identification and elimination of losses (excessive movements, waiting, defective products, overproduction of stock) in all logistics processes.
- Improvement of demand forecasting methods: Use of statistical models, machine learning to improve forecast accuracy and optimize stock levels.
- Development of cooperation: Implementation of joint planning, forecasting and replenishment (CPFR) practices with suppliers and customers.

Outsourcing: Transferring part or all of the logistics functions to specialized providers (3PL – Third-Party Logistics), which can reduce costs and allow you to focus on your core business.

The effectiveness of the implemented changes is assessed by monitoring logistics KPIs before and after optimization, analyzing cost dynamics, and calculating the return on investment (ROI) in technology. Dashboards are used to monitor effectiveness, which may include metrics such as the percentage of orders fulfilled on time and in full (OTIF), the cost of logistics operations as a percentage of turnover, inventory turnover by category, warehouse space utilization rate, and picking accuracy (data is visualized to track progress) [4].

The strategic benefits of logistics optimization go beyond simple cost reduction. Customer satisfaction increases due to timely and accurate deliveries. The flexibility and adaptability of the supply chain to changes in demand and external conditions increases. Operational transparency and data quality improve, which helps make more informed management decisions. All this together forms a sustainable competitive advantage for a wholesale company. However, the implementation of optimization projects is associated with challenges: the need for investment, possible resistance of personnel to changes, the complexity of integrating new systems and the need for continuous employee training.

Therefore, optimization of logistics processes is a continuous task for wholesale companies striving to improve efficiency and competitiveness. Analysis of problems in warehouse, transport logistics and inventory management shows the need for an integrated approach to their solution, combining the implementation of modern technologies (WMS, TMS, automation) and the improvement of operational processes (optimization of topology, picking methods, forecasting).

The synthesis of theoretical foundations and practical solutions demonstrates that systemic optimization of logistics allows not only to significantly reduce costs, but also to improve the quality of customer service, increase the flexibility of the supply chain and create a basis for long-term sustainable business development. Recommendations for wholesale companies include regular audits of logistics operations, development of an optimization roadmap with clear goals and KPIs, strategic investments in information systems and automation, development of personnel competencies and building a culture of continuous improvement. The principles and methods of optimization are universal and can be adapted to the specifics of various wholesale trade sectors and the scale of companies.

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