

Research on Optimization Strategies for Supply Chain Management under the New Quality Productive Forces Environment

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Abstract

Under the new quality productive forces, enterprise supply chain management is confronted with novel challenges and opportunities, necessitating a re-evaluation of optimization strategies. Supply chain management involves the coordination, organization, and control of logistics, information flows, and capital flows among various entities within the supply chain to achieve optimal time and cost efficiency. In this context, the optimization strategies for supply chain management are primarily manifested in four aspects: 1) enhancing logistics service capabilities and standards through the transformation of existing logistics systems; 2) strengthening enterprise competitive advantage via effective integration of suppliers, manufacturers, retailers, and customers; 3) promoting the sharing and efficient flow of information resources through the establishment of robust information sharing systems; and 4) fostering harmonious cooperation and joint development among supply chain members by establishing mechanisms for benefit coordination.

Keywords

New Quality Productive Forces, Supply Chain Management, Optimization

1. Introduction

In the context of new quality productive forces, the modes of competition and sources of competitive advantage for enterprises have undergone significant changes. Enterprises must re-evaluate their supply chain management optimization strategies to align with the demands of this new environment. The traditional supply chain management models are no longer adequate to meet contemporary requirements, necessitating continuous optimization and innovation (He, 2020). Accord-

ingly, this paper examines the opportunities and challenges confronting supply chain management under the new quality productive forces environment, and puts forward targeted optimization strategies. It is anticipated that the findings of this study will provide valuable reference and guidance for enterprises seeking to enhance their supply chain management capabilities.

2. Opportunities Facing Supply Chain Management under the New Quality Productivity Environment

1) Opportunities brought by technological innovation

In the context of new quality productive forces, technological innovation has created novel opportunities for supply chain management. The adoption of technologies such as artificial intelligence, big data, and the Internet of Things enables supply chain management to implement more efficient and intelligent solutions (Wang & Li, 2017). For instance, artificial intelligence holds significant promise within supply chain management, facilitating the optimization of logistics routing, inventory management, and demand forecasting, thus enhancing overall operational efficiency. Furthermore, the deployment of digital technologies has accelerated the digital transformation of supply chains, resulting in more transparent and traceable supply chain management that enables enterprises to better respond to market fluctuations and customer needs.

2) Organizational Change and Ecological Synergy

In the context of new quality productivity, the organizational structure of supply chains is undergoing significant transformation. Traditional supply chain structures tend to be decentralized and lack coordination, whereas under the new quality productivity paradigm, firms are increasingly inclined to establish centralized and integrated supply chain management organizations to facilitate efficient resource integration and coordinated operations (Shang, 2020). Furthermore, supply chain management is no longer confined within the enterprise, but is evolving toward ecosystem-based collaboration. Accordingly, enterprises must develop more open and flexible collaborative relationships with upstream and downstream firms as well as partners, thereby enabling resource sharing and leveraging complementary strengths.

3) Efficiency improvement and cost optimization

The advancement of new quality productive forces is manifested not only in technological innovation, but also in increased efficiency and cost optimization (Cui, 2017). By leveraging new technologies, enterprises can deliver higher-quality services at reduced costs, thereby enhancing the overall service capability of the supply chain. For instance, the adoption of intelligent operations enables supply chains to automatically adjust and optimize their processes in response to market fluctuations and potential risks, thereby strengthening supply chain resilience and security (Chen, 2016). Furthermore, the impetus from new quality productive forces has promoted innovation in supply chain finance. The application of digital and intelligent technologies facilitates the efficient integration of capital flow, in-

formation flow, and logistics, leading to improved operational efficiency in supply chain finance.

4) Green and sustainable development

The promotion of new quality productive forces has created opportunities for green and sustainable development in supply chain management. As environmental awareness grows, enterprises are placing greater emphasis on building green supply chains (Sarkar & Chung, 2020). By utilizing environmentally friendly technologies and materials, companies can implement green production, reduce their environmental impact, and simultaneously enhance their social responsibility and market competitiveness. Furthermore, the development of green supply chains fosters internal collaboration within organizations and advances joint efforts among upstream and downstream enterprises to achieve sustainable development.

3. Challenges Faced by Supply Chain Management under the New Quality Productivity Environment

1) The precision and flexibility requirements of logistics distribution

The demands of new productive forces for precision and flexibility in logistics distribution are primarily manifested in two areas. First, personalized customization in production requires logistics distribution to fulfill individualized client demands through precise management and dispatching. In customized production, orders must be analyzed and production plans and schedules rationally arranged based on order information, product characteristics, and quantities to ensure customer requirements are met upon delivery. Second, multi-variety, small-batch customized production necessitates that logistics distribution supports the characteristics of diverse product types and small quantities. Under traditional supply chain management models, challenges such as complex inventory management, lagging information system development, and information asymmetry often lead to mismatches and errors during transportation (Green et al., 2019). In the environment shaped by new productive forces, the construction of supply chain management systems based on the Internet and Internet of Things enables real-time monitoring throughout the supply chain, achieving precise management and scheduling of order data. Through order optimization, the logistics distribution process becomes more accurate and flexible, thereby enhancing the operational efficiency of the overall supply chain system.

2) The challenge of real-time performance and accuracy of information flow

In traditional productivity environments, information flow between enterprises is primarily governed by internal enterprise channels, resulting in relatively slow information transmission. In contrast, within the context of new-type productivity, inter-enterprise information flows much more rapidly and real-time information exchange has become increasingly crucial. Nevertheless, in traditional productivity settings, information transmission often remains internalized, preventing timely dissemination to downstream enterprises. Consequently, if down-

stream enterprises need to access the demand plans of their upstream partners, they must rely on their own channels to obtain such information, thereby increasing supply chain costs. In the new quality productivity environment, both the real-time nature and the accuracy of information flow have become critical, with slow information transmission persisting as a significant challenge in current supply chain management. With the advent of the big data era, enormous volumes of data are generated daily within supply chains, and a key issue now is how to process this data effectively and extract valuable information—an ongoing challenge for supply chain management.

4. Optimization Strategies for Supply Chain Management under the New Quality Productivity Environment

1) Improve logistics service capability and level through logistics system transformation

In the era of new quality productive forces, logistics service capability and standards have become a core competitive advantage in supply chain management. Accordingly, enterprises should prioritize the transformation of their logistics systems: through effective upgrades, they can enhance logistics service capability and standards, thereby optimizing overall supply chain management. Under these conditions, enterprises should focus on constructing intelligent logistics systems that are user-centered and prioritize rapid response. Such systems can significantly enhance both the efficiency and responsiveness of supply chain management, enabling enterprises to promptly address customer demands and resolve supply-demand mismatches among supply chain participants. Transforming traditional logistics operations to build intelligent logistics systems can improve both customer service and supply chain efficiency. For instance, intelligent logistics systems leveraging technologies such as the Internet, big data, and cloud computing can achieve rapid response and bolster the overall efficiency of the supply chain.

2) Effectively integrates suppliers, manufacturers, retailers, and customers, enhancing the company's competitive advantage

In the environment shaped by new productive forces, enterprises involved in the supply chain are focused on reducing costs, improving quality, and strengthening their competitive advantage. Accordingly, firms must enhance communication and collaboration with key stakeholders, including suppliers, manufacturers, retailers, and customers, and strive to optimize the logistics, information flow, and capital flow among these different entities. Such efforts simultaneously improve overall supply chain performance and individual enterprise competitiveness. Specifically, these objectives can be accomplished through several measures: 1) managing suppliers to encourage the provision of high-quality products and services; 2) forging win-win strategic partnerships through cooperative relationships; 3) establishing and integrating information systems to promote information sharing and exchange across all entities in the supply chain; and 4) devel-

oping a benefit coordination mechanism to facilitate harmonious cooperation and joint development among supply chain participants.

3) Establish an efficient information sharing system to achieve the sharing of information resources and effective flow of information

Within the environment of new productive forces, rapid transmission and sharing of information directly influence the operational efficiency of the supply chain, while the effectiveness of information sharing relies on both the speed of transmission and the accuracy of the information content. Consequently, establishing an efficient information sharing system within supply chain management is essential to facilitate the sharing and effective flow of information resources. To enable efficient information sharing among supply chain members, attention should be paid to the following aspects: First, developing internet connectivity both within and between enterprises enables information sharing among all supply chain participants. By linking suppliers, manufacturers, retailers, and customers through the internet, effective communication can be achieved between suppliers and manufacturers, between retailers, and between enterprises and customers. Second, the establishment of a robust information platform allows for data exchange and sharing among supply chain members. Such a platform can efficiently process data related to customer demand, product design, production planning, inventory management, and delivery schedules, thereby providing supply chain members with timely and reliable information support and enhancing overall supply chain efficiency.

4) Establish a benefit coordination mechanism to achieve harmonious cooperation and common development among all members of the supply chain

The optimization of supply chain management strategies requires not only effective integration of information, capital, and logistics among all member enterprises, but also the establishment of mechanisms for benefit coordination to facilitate harmonious cooperation and collective development within the supply chain. To realize such harmonious collaboration and shared advancement, enterprises must construct benefit coordination mechanisms that ensure the sharing of benefits and the joint assumption of risks among supply chain members. This can be achieved by formally defining the rights and obligations of all parties in the supply chain through contractual agreements, thereby achieving benefit sharing; implementing incentive mechanisms to enhance the production motivation of member enterprises; developing risk-sharing frameworks to strengthen inter-organizational information exchange and elevate the effectiveness of supply chain risk management; creating supplier and customer evaluation systems to establish scientific and effective supplier and customer selection mechanisms, thereby improving the quality of supplier and customer services; and fostering strong partnerships to reinforce the stability of cooperation among enterprises. In conclusion, under the new landscape of productive forces, enterprises should optimize supply chain management according to their specific developmental circumstances to enhance core competitiveness, while also strengthening efforts in information sharing, resource

integration, and customer service.

5. Conclusion

In the context of new quality productive forces, optimizing supply chain management requires enterprises to upgrade existing logistics systems, thereby enhancing logistics service capacity and standards. Enterprises should also achieve effective integration of suppliers, manufacturers, retailers, and customers to strengthen their competitive advantage. Furthermore, establishing efficient information-sharing systems is essential for promoting information resource sharing and effective information flow. The construction of benefit coordination mechanisms is also necessary to facilitate harmonious cooperation and collective development among supply chain members. As economic globalization intensifies market competition, enterprises must continuously enhance their core competitiveness to secure a competitive edge. The optimization strategies for supply chain management in this new environment offer enterprises innovative developmental approaches and directions, which are vital for sustainable development. Additionally, these strategies serve as valuable references for other enterprises.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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