Opportunities and Pathways for the Development of International Maritime Logistics Supply Chains Under the Belt and Road Initiative

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Abstract: In the implementation process of the Belt and Road Initiative (BRI), there has been a consistent augmentation in the openness of international maritime routes, concomitant with the fortification of logistical infrastructure. This dynamic has bestowed noteworthy prospects for the evolution and progression of international maritime logistics supply chains. It is imperative for pertinent sectors to capitalize on these developmental opportunities and to investigate pioneering reform pathways. This paper elucidates the strategic significance of the BRI, scrutinizes the developmental opportunities it confers upon international maritime logistics supply chains, and concomitantly proffers precise developmental pathways.

1.Introduction

Within the evolution of the international maritime logistics supply chain, the implementation of the Belt and Road Initiative (BRI) stands as a pivotal factor, furnishing robust demand assurance, expediting the transition of the supply chain towards intelligent and digital trajectories, and providing supplementary, streamlined backup channels. Against this backdrop, the domestic maritime logistics sector is compelled to capitalize on the opportunities ushered in by the Belt and Road Initiative in its pursuit of international development. It is imperative to proactively chart courses of reform and innovation, perpetually broaden developmental horizons, and foster a more steadfast and secure progression of the supply chain.

2.Strategic Significance of Belt and Road Initiative

In the milieu of advancing global economic integration, the Chinese government, attuned to prevailing trends, has proactively introduced the Belt and Road Initiative (BRI). The execution of this initiative epitomizes China’s commitment to realizing a shared global ideal. It serves as a catalyst for domestic enterprises to actively embark on the path of internationalization and development, contributing to the establishment of a new paradigm of international cooperation. The formulation and implementation of the BRI have the potential to foster heightened interconnection and comprehensive interoperability in the realm of trade logistics among countries along its route, providing significant impetus for the construction of a multi-tiered, all-encompassing logistics network system. In the course of enhancing trade cooperation among nations, BRI acts as a substantial driver for the achievement of balanced and autonomous development for all participating countries [1]. Concurrently, the tangible realization of the BRI injects vibrancy into the economic construction and development of neighboring countries and various regional economies. It nurtures economic stability and high-quality development, augments the allure of investment in regions along the routes, and engenders numerous employment opportunities for local populations. Within the structured implementation of the BRI, the construction of the logistics supply chain imposes novel and elevated requisites. This necessitates a macro-level optimization of national layout, attention to the integrated utilization of diverse market resources, a commitment to the concept of mutual benefit throughout, and the scientific planning of the overall pattern and development direction of the logistics supply chain.

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3. Developmental Opportunities Brought by the Belt and Road Initiative to the International Maritime Logistics Supply Chain

3.1. Provision of Demand Assurance

During the systematic implementation of the BRI, it possesses the capacity to offer more ample and reliable demand assurance for the long-term construction and development of the international maritime logistics supply chain. The global industrial chain pattern has undergone significant transformation in recent years, with various emerging economies engaging in the international division of labor system. This includes countries along the Belt and Road, bringing greater benefits to the respective nations. Given the immense potential and upward mobility in the economic market development within the countries along the Belt and Road, their integration into the international maritime logistics supply chain will yield a more robust demand guarantee for the future development of China’s supply chain. Since the initiation of the Belt and Road Initiative, China has established trade cooperation relationships with multiple countries along the route, resulting in a trade volume surpassing 9.2 trillion U.S. dollars by 2020. In-depth research and analysis conducted by the World Bank regarding the Belt and Road Initiative indicated that this initiative would increase trade interactions among participating countries by approximately 4.1% when juxtaposed to previous levels. Under the in-depth implementation of this initiative, China is poised to engage in more robust economic and trade interactions with regions along the route, including Africa, East Asia, Central Asia, Europe, and Southeast Asia. This will afford China new opportunities in allocating shipping resources, developing hub networks, and determining the direction of internationalized cargo flows. Simultaneously, it will provide a more robust and diversified demand assurance for the future development of the logistics supply chain.

3.2. Advancement of Intelligent Development

Throughout the implementation of the BRI, numerous regions and sectors have been intensifying their efforts in infrastructure construction and integrating various modern technologies. This concerted endeavor is poised to strongly propel the transformation of the maritime logistics supply chain towards modernization, intelligence, and heightened efficiency. In recent years, there has been a growing emphasis from the government on the development of emerging infrastructures, including blockchain, satellite networks, artificial intelligence, the Internet of Things, 5G, and industrial networks. This focus, synchronized with the surge in investment, aims to provide substantial support and assurance for innovative, integrated, and information technology-based infrastructure, thereby fostering the advancement of diverse infrastructure projects.

In the continuously evolving digital era, amidst ongoing technological innovation and maturation, the international maritime logistics supply chain is placing increasing emphasis on visualization technology. This technology enables a comprehensive understanding of the entire logistics and distribution process, along with various resource information. The goal is to ensure traceability in all aspects of logistics services. Additionally, there is a growing recognition of the importance of logistics live broadcasting, among other advancements, leading to the establishment of new management models. Simultaneously, there is a heightened urgency in the maritime logistics sector for the construction of intelligent and networked information interaction platforms and channels. All stakeholders are deepening their comprehension of the significance of intelligent logistics construction, driven by a variety of emerging technologies, thereby propelling maritime logistics into the era of intelligent logistics. As an integral component within the context of development-oriented infrastructure integration, intelligent maritime logistics infrastructure is a key focus. Consequently, it can benefit from a series of favorable policies formulated by the government for new infrastructure. As the new infrastructure strategy gradually takes root, the international maritime logistics supply chain will progress towards intelligence and digitization. This evolution serves as a foundation for enhancing the industry’s comprehensive competitive strength, providing significant developmental opportunities for the progression of the supply chain.

3.3. Establishment of Backup Channels

Against the backdrop of the orderly implementation of the BRI, a novel logistics channel has been gradually established, serving as a critical backup channel in the international maritime logistics supply chain. In recent years, China has actively undertaken the construction of various new logistics and transportation channels, playing a crucial strategic security role during extraordinary circumstances. Notably, China and the Association of Southeast Asian Nations (ASEAN) have intensified their trade cooperation, surpassing trade volumes with Europe and the Americas. Following the signing of the Free Trade Agreement (FTA), tariffs on over 7,000 products were reduced to zero, robustly promoting the construction of a new type of land and sea trade channel by China. The current world economic landscape is undergoing significant adjustments and changes influenced by various factors, including the presence of unilateralism and local protectionism in certain regions. Even in an environment where the global economy is subject to uncertainties, key logistics channels established during the implementation of China’s BRI can function as vital backup channels in the international maritime logistics supply chain, encompassing the new land-sea trade routes and the China-Europe Land-Sea Express Line.
4. Innovative Development Pathways for the International Maritime Logistics Supply Chain under the Belt and Road Initiative

4.1. Establishment of a Three-Dimensional Supply Chain System

In order to seize the array of development opportunities brought about by the Belt and Road strategy, the international maritime logistics sector needs to actively establish a three-dimensional supply chain system. Firstly, during the development of the maritime logistics sector, attention should be directed towards guiding industry players to adopt a global perspective in constructing a more comprehensive and scientific maritime mainline network. This involves creating new international maritime routes, optimizing the allocation and adjustment of maritime transport capacity on a global scale, adhering to specialization principles, and developing intelligent maritime systems for liquefied natural gas, crude oil, containers, coal, etc. Additionally, there should be a focus on expanding new international routes from strategically significant overseas ports, integrating technologies like blockchain, and reconstructing the maritime service network system on a global scale. Secondly, concerted efforts should be made to promote the development of maritime fleets towards scalability. There is a need to update the structure of scalable development and establish specialized maritime fleets in specific sectors, such as standardizing and large-scale fleets for liquefied natural gas, enhancing the international competitiveness of specialized fleets in bulk cargo, containers, and crude oil [3]. Thirdly, to comprehensively understand the development level of China’s maritime enterprises and further enhance their international integration, expanding China’s market share in the international maritime logistics sector is crucial. This involves intensifying integration with upstream and downstream industries, coordinating various modes of transportation, bolstering the integrated transport capacity of maritime transport, and developing a one-stop logistics service system from an international perspective. Through effective management and coordination across all aspects of capacity, a prominent leadership position in the international logistics supply chain can be established, reinforcing control functions.

Fourthly, amid the development of BRI, proactive measures should be taken to build world-class international terminals. Concurrently, efforts are directed toward cultivating robust integrated service providers and operators. This entails integrating domestic ports into the layout of cross-border liner logistics hubs and establishing an open pattern for service development based on strengthened cooperation between land and sea, fostering comprehensive east-west connectivity.

4.2. Improvement of Relevant Long-Term Mechanisms

Chinese shipping and logistics enterprises should be encouraged to actively pursue international development in the context of the BRI. It is crucial to underscore the importance of enhanced collaboration among enterprises to achieve the goal of collective international expansion. This approach aims to empower relevant enterprises within the restructured international maritime logistics supply chain with greater autonomy and control, fostering high-level development in the domestic logistics chain. Currently, in the international maritime logistics industry, the three major maritime alliances continue to maintain a balanced stance, while domestic shipping companies hold a relatively small share in international shipping operations (as illustrated in Table 1).

Table 1: Share of China’s International Maritime Business in the Asia-Europe Routes (2020)

<table>
<thead>
<tr>
<th>Maritime Logistics Industry</th>
<th>Business Share</th>
</tr>
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<tbody>
<tr>
<td>2M + Modern Merchant Ships</td>
<td>35%</td>
</tr>
<tr>
<td>Ocean Alliance</td>
<td>31%</td>
</tr>
<tr>
<td>THE Alliance</td>
<td>19%</td>
</tr>
<tr>
<td>Others</td>
<td>15%</td>
</tr>
</tbody>
</table>

Currently, China’s maritime logistics enterprises face a notable paucity in global delivery capacity, a significant gap compared to international logistics giants. In order to address this shortfall, there is a pressing need to enhance integration and development among enterprises. This should be grounded in an overall optimization of the construction pattern, with the active participation of various stakeholders to strengthen synergies and linkages across multiple departments. Simultaneously, a diversified approach to coordination is essential, aiming to establish a novel coordination and management mechanism. The formation of an International Maritime Logistics Supply Chain Group is proposed, with the objective of actively developing globalized service businesses. This initiative seeks to propel domestic brand commodities into advantageous positions within international e-commerce development, underpinned by a robust logistics supply chain and associated management mechanism. The ultimate goal is to fortify the capabilities for international endeavors [4].

The state and government should redouble support for China’s maritime logistics enterprises to promote their continuous expansion and development, enhance the overall sustainable function of the domestic maritime logistics field, and bolster operational efficiency. Simultaneously, they should be steadfast in a commitment to the pathway of innovative development, scientifically allocating shipping and logistics factors and related resources, and encouraging enterprises to expand production capacity continuously. This involves ensuring that hub ports continue to increase their opening efforts, strengthening the modernization of construction and
operation and maintenance management, and promoting the continuous enhancement of the competitiveness of maritime logistics enterprises overseas. The goal is to build a one-stop logistics network within the global context, optimize maritime services, improve service levels, and enhance the efficiency of logistics and transportation. Domestic maritime logistics enterprises should bolster strategic collaborations, thereby augmenting the overall resilience of the maritime logistics supply chain through integrated development. Simultaneously, they should persistently optimize logistics services with synergistic assurances. In this context, China ought to actively advance the establishment of port clusters, fostering an integrated and coordinated development model among ports across diverse regions. This entails reinforcing collaboration in the realm of maritime logistics and escalating investment in infrastructure development. The objective is to facilitate the integration of various ports and transportation infrastructure, giving rise to a novel network of facilities. By prioritizing optimized configuration and the systematic integration of logistics resources, endeavors should be directed toward rectifying development shortcomings, accentuating competitive strengths, and fortifying ports' developmental prowess and resilience. This will culminate in the establishment of a restructured logistics network characterized by enhanced infrastructure, operating with heightened efficiency and safety standards, thereby fostering both internal and external connectivity. Concurrently, to facilitate the secure evolution of the logistics supply chain, it is imperative to refine the construction of a risk analysis system, as illustrated in Figure 1, upon which the establishment of an early warning mechanism can be predicated.

Furthermore, it is imperative for maritime logistics enterprises to proactively participate in the BRI, actively contributing to the establishment of a maritime logistics community with a shared future. The nation and its government should anchor maritime enterprises in the neighboring regions and countries along the Belt and Road by directing investments into port infrastructure. Emphasizing the streamlined transmission and sharing of maritime logistics information is of paramount concern. Under the auspices of propelling a community with a shared future, the overarching goal is to construct secure, efficient, and interconnected new trade routes.

5. Conclusion

To put it in a nutshell, ensuring the stable and secure development of the international maritime logistics supply chain necessitates a proactive embrace of the opportunities arising from the Belt and Road Initiative. It involves the exploration of new development prospects, with a concentrated effort on constructing an integrated supply chain system and refining long-term mechanisms. Crucially, tackling diverse challenges in maritime logistics, upholding the development of international trade, and bolstering the international competitiveness of domestic trade and logistics enterprises are integral components of this endeavor.

References
