
Development Status of Competitive Cooperation between Dalian Port and Yingkou Port under Port Supply Chain

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Abstract

The development of foreign port groups was relatively early and their development was relatively mature. At the same time, the domestic port groups and the Yangtze River Delta have begun the construction of port groups with the joint development of ports and ports. This article compares and analyzes the construction of the port groups at home and abroad, and tries to find a model suitable for cooperation between Dalian Port in the Bohai Bay region and other nearby ports. Accelerate the transition of Dalian Port to the fourth-generation port and increase competitiveness.

Keywords

Port group; Dalian Port and Yingkou Port; Fourth-generation port; Competitive cooperation.

1. Introduction

The port is a central part of logistics and transportation, and occupies a very important position in the national economy. The level of port development has an important impact on the economic development of a region. As China's opening to the outside world continues to deepen, the status and role of the port is even more important. Under this background, in order to enhance their competitiveness, some port companies began to apply the supply chain theory to the operation and management of ports. In particular, the fourth-generation development stage of "combination ports" is established by linking ports in the physical space separated by ports. At present, the current research on port competitiveness mainly focuses on competitiveness evaluation research, the necessity of port competition and development, and research on competitive strategy selection based on mathematical models, and regards ports as a node in the supply chain. Under the background of supply chain strategy, less research has been conducted on port and shipping alliances between the ports and shipping companies, ports, and ports and the Hong Kong alliance. The adjacent ports in the region are placed under the supply chain. Research on how the ports should work together to enhance competitiveness under the supply chain ideology will help enrich the use of the supply chain theory to enhance the competitiveness of the port.

Dalian Port and Yingkou Port are the two major ports in the Liaoning coastal port group. Because they are backed by the same economic hinterland, the business scope of the port is very similar. There is a lack of trust and communication between the two ports, and there is no supply chain management idea. Applied to the development of enterprises, the two ports have always been in a state of mutual administration and competition.

2. Research Status of Port Supply Chain

(1) Status of foreign research

As more companies begin to change their management models and shift from a production model to a market model, the company pays more attention to the comprehensive management and management. It not only pays attention to the optimization of the internal business, but also fully optimizes the company from the perspective of the "supply chain". The concept of chain management began to be introduced into the management of port companies, pointing to a new path for the port companies to regain their vitality.

With the increasing frequency of world economic exchanges, more and more scholars at home and abroad have begun to explore the role of port companies in the supply chain.

Ross Robinson (2002) pointed out that due to the rapid development of the supply chain where the port is located, the existing functions have been unable to meet the development needs of the port, but should regard the port as part of the value chain, and clearly define the division of customers and markets through value transfer. The port creates value for its own supply chain. The positioning of port companies in the new market competition should be an important driving component of the value chain [1]. Romano (2003) believes that the port is at the core of its own supply chain, and the development of the port has a decisive influence on the port supply chain. The PEST analysis method is mainly used to develop the environment of the port supply chain, and focuses on the study of the external environment [2]. Carbone V, De Martino M. (2003) proposes to change the role of the port in supply chain management [3]. Christopher. M (2005) believes that the economic activities of the port are often organized and implemented by relatively different players. It is a complex and dynamic entity, which leads to different operational, organizational, and strategic methods for the port system. At the same time, it highlighted the importance of port functions and the strategy of vertical integration and horizontal integration of ports [4]. Dong-wook Song, Photis M. Panayides (2007) and others believe that the development of contemporary logistics and shipping industry shows that the port includes various land and sea transportation methods and is an important node in the supply chain. It should play an important strategy role in the development of the shipping industry [5].

(2) Domestic research status

The fourth-generation port refers to physical space separation, but implements connection through common operations or management, this concept has laid the foundation of the port supply chain. Through the study of port function transformation, supply chain management characteristics, and new trends in port development, the academic community has put forward the concept of port supply chain and conducted more in-depth discussion and research. Sun Fengshan (2004) believes that port companies should respond quickly to changes in the market by strengthening the selection of supply chain nodes and the reorganization of logistics operations procedures. Partners can achieve mutual benefit and win-win, promote overall coordination of the supply chain, and enhance the port companies' The adaptability of a fiercely competitive environment [6]. Zhenhong proposed the concept of the fourth-generation port in 2005. Yang Mingming (2006) analyzed the characteristics of the port supply chain and introduced the operating model of the Hong Kong port supply chain [7]. Shi Lirong (2007) has conducted a thorough analysis of the structure of the port supply chain and how to construct the port supply chain [8]. Yang Xiafang and Huang Junping (2007) analyzed the global supply chain management model centered on the port and put forward the idea of building Shanghai International Shipping Center through the idea of supply chain management [9]. Chen Huanbiao (2009) proposed four kinds of partnerships in the port supply chain and discussed the goals and steps for building a port supply chain [10]. Zhang Wei and Zhen Hong (2009) analyzed the three stages of the relationship between ports and supply chain, proposed the characteristics of the fourth generation of ports based on the idea of supply chain, and gave suggestions for development [11]. Li Jianli and Zhen Hong (2009) studied the relationship between ports and upstream and downstream enterprises,

analyzed who should occupy the core position in the port supply chain, proposed the platform effect of the port, and proposed suggestions on how to build a port platform[12].Lu Yongming(2009), by introducing the concept of coordination degree, constructed an index system for the coordinated evaluation of the port supply chain. Through the comparison of the horizontal and vertical coordination of a single port supply chain, the coordination trend and existing problems were analyzed to find out more coordination measure[13].Shao Jing (2011) proposed a proposal for building a port supply chain by analyzing the problems in the development of Ningbo Port[14].Wu Guozhong(2013) expounded the concept and connotation of the fourth-generation port and analyzed the cases with fourth-generation port concepts at home and abroad in order to sum up the significance of developing fourth-generation ports[15].

To sum up, the concept of the fourth-generation port has prompted port companies to introduce supply chain management into port operations and change the development trend of ports. Domestic and foreign scholars have studied and elaborated on the conceptual connotation and characteristics of the port supply chain, and studied how the upstream and downstream companies in the construction process of the port supply chain coordinate. However, most of the current research is limited to a single port, the reality is often that multiple ports will be gathered in a single area. There are fewer studies on how multiple ports in neighboring regions should develop under the supply chain concept and how to construct a port supply chain.

3. Research Status of Port Group Theory

The port group refers to the large group of port groups that are formed by individual ports whose geographical space is close to each other and where the functions of the economic hinterland overlap. When multiple ports have physical space close to each other and their hinterlands overlap each other, it is easy to form a port group. The development of science and technology and the acceleration of globalization have promoted the development of international logistics and supply chain, as an important part of the port, the port is continuously evolving in terms of port functions and spatial layout. The port group is created and developed in the course of the comprehensive evolution of these two aspects. When the development of the port enters the era of supply chain, how the port group should coordinate development and achieve the development of the port's co-opetition, has aroused the attention and research of scholars at home and abroad.

Heaver et al. (2000) summarized the forms of cooperation among the major European port alliances. Through alliance ports, they could obtain more favorable negotiation advantages, but they also caused an imbalance in the port logistics market[16].Langen (2006) and others from the perspective of social welfare, demonstrated that port cooperation can improve the utilization rate of the port, economic scale, optimize the investment structure and reduce the impact of the environment[17].

Wang Xudong and Du Qidong (1999) proposed that port coordination is a trend for the development of port groups. It is believed that disorderly competition among port groups and ports is unfavorable to individual ports and the entire port group[18].Therefore, it is a trend for the development of the port to achieve synergy through certain ports[19].He Jianyun and Ning Yuemin (1999) studied the experience of port cooperation in Western Europe, and proposed that port cooperation needs a reasonable organizational model and opens up new ideas for the discussion of port competition and cooperation issues[20].Shi Xin (2001) studied the conditions of port cooperation from the perspective of game theory, and concluded that in the fierce competition, port cooperation can bring economic benefits to the port. Therefore, the port will attach importance to it as an important strategy, but cooperation between ports is conditional. Once a certain port can obtain more benefits, the cooperation between ports will disappear[21].Li Chao and Zhang Hanqing (2004) discussed the positive role of competition and cooperation in reducing operating risks, costs, improving service level economic benefits, and improving organizational structure of ports[22].Li Nan (2006) believes that collaborative competition is a consistent competition model between collaboration and confrontation, and will be a key choice for

port companies to gain competitive advantage[23].Lin Yushan (2011) analyzed the development status of Dalian Port and Yingkou Port, analyzed the feasibility of competitive cooperation between the two ports through the establishment of a game model, and proposed suggestions for the development of cooperation between the two ports[24].Du Min (2012) analyzed the necessity of the cooperation and development of the Pearl River Delta port and the difficulties in cooperation. Finally, he proposed a proposal for the regional cooperation of the port group [25].

Through the introduction of relevant literature review, foreign research on port groups has formed a relatively complete research system, and domestic research is lagging behind. We can see that: for the study of the formation of port groups, most of them focus on the basic construction investment of the port, the level of competitiveness of the port, and the competing issues of the port, it is believed that the cooperation between neighboring ports to form a group of ports can improve the competitiveness of ports, and it is mainly based on qualitative research. However, the current research, especially the study of Liaoning coastal port groups, is mostly based on the second- and third-generation port phases. How to accelerate the evolution of ports to fourth-generation ports in the supply chain and become an important link in the supply chain to build port groups in the Hong Kong Federation is still relatively small. Through the study of competition and cooperation issues on supply chain nodes between Dalian Port and Yingkou Port, Rational planning and coordination for the development of coastal port groups in Liaoning.

4. Development Status of Competitive Cooperation between Dalian Port and Yingkou Port

Both Dalian Port and Yingkou Port belong to the coastal economic belt of Liaoning Province and have the same economic hinterland. Over the years, the relationship between the two ports has not been coordinated and there has been a serious situation of disorderly competition. This is no matter whether it is building a Northeast Asia International Shipping Center for Dalian. Still, it is very unfavorable for the development of the entire Liaoning coastal port group. It is really difficult to resolve in the disorderly competition between the two ports is that local governments have been vigorously building local ports to pursue their own development without the customer's view. This has caused the rational development of shoreline resources and caused serious waste of resources due to repeated construction. The problem of disorderly competition that it is really difficult to resolve between the two ports is the local governments vigorously build local ports to pursue their own development without the conditions of customers, this has caused the rational development of shoreline resources and serious waste of resources due to repeated construction. Judging from the current competition situation and competition trends among ports in Liaoning Province, the recent competition between Dalian Port and Yingkou Port mainly revolves around the supply of goods in the economic hinterland, the opening of new routes, the construction of dry ports in inland cities, and the cooperation and support of cities in the hinterland.

(1) Competition in the economic hinterland. Both Dalian Port and Yingkou Port belong to the coastal ports of Liaoning Province. The land distance between the two port is only 180 kilometers, backed by the same economic hinterland, and there is a large overlap in the hinterland cities. How much cargo throughput in the port? On the one hand, it is determined by the economic volume of the hinterland of the port. On the other hand, it is also a preference for the choice of port by the person receiving and dispatching goods in the port radiation area. Therefore, the port's competitive core of cargo supply is the competition for the port's economic hinterland.

(2) Competition of container routes and liners. The future trend of port shipping development is container shipping. Flights and routes are the carriers of containerized cargo transportation, and also the core competitiveness of container ports. In order to gain an edge in the competition, the two ports are all working hard to attract liner companies and increase container routes. The relationship between container route flights and container supply is complementary and mutually reinforcing. If there is more stable container supply in the port, then it is easy to find the shipping company to start the

container shipping route and flights, if the port has relatively stable routes, it can easily attract more cargo owners to choose their own container transportation. Therefore, Dalian Port and Yingkou Port no matter which port has more intensive and convenient container flights and routes, can occupy an advantage in the competition.

(3)Hardware Port Infrastructure and Software Service Quality Competition. With the implementation of the national strategy for revitalizing northeast China in recent years, the level of economic development in the northeast region has achieved rapid growth, which has also led to an increase in the number of boxes of goods in Northeast China. The rapid growth of the market has enabled Dalian Port and Yingkou Port to continue to compete in improving infrastructure, expanding the scale of ports, and improving the quality of port services. Both ports have increased the investment in the construction of deep-water berths, container yards, container quay bridges, and yard handling machinery. The hardware conditions of the port directly affect the efficiency of the container operation at the port and determine the container's residence time in the port, thus affecting the interests of the container liner company. Therefore, the competition in the infrastructure of the port is also the focus of container port competition. In terms of service quality, the competition between the two sides will also be carried out in terms of accelerating the speed of customs clearance and reducing service prices.

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