Research on Qingdao Port Logistics Development under the Background of “Belt and Road”

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Abstract: The implementation of “the Belt and Road” strategy has brought the ancient “Silk Road” to a new spring and ushered in an unprecedented development opportunity. The main purpose of the "the Belt and Road" strategy is to expand China's “Silk Road” and achieve cooperation and win-win with other countries. The article analyzes the basic situation of Qingdao Port, conducts SWOT analysis on the development of Qingdao Port, proposes the development layout of Qingdao Port Logistics, and puts forward the development countermeasures of Qingdao Port Logistics.

1. Introduction
Qingdao Port is the center of the Northeast Asian port circle and is an important international trade hub in the Western Pacific. It is currently one of the largest integrated ports in the world. In 2017, the throughput ranked sixth in China and eighth in the world. Covering an area of 165.8 square kilometers, Qingdao Port has four port areas, operates 84 berths, and is open to more than 700 ports in more than 180 countries and regions around the world. Qingdao Port can provide comprehensive port-related services ranging from basic port services such as loading and unloading and warehousing services to logistics and financing related services. Relying on the advantages of natural water depth and industry-leading facilities and equipment, Qingdao Port can berth the world's largest container ships, iron ore ships and tankers. The loading and unloading efficiency has been leading the world. Among them, container handling efficiency and iron ore single-machine loading and unloading efficiency are the number one in the world. The throughput of Qingdao Port from 2010 to 2017 is shown in Figure 1.
2. SWOT analysis of Qingdao Port Development

SWOT is a strategic analysis method that draws conclusions from a comprehensive assessment and analysis of the strengths, weaknesses, opportunities, and threats of the analyzed objects.

2.1 Advantage analysis
(1) Qingdao Port has excellent location conditions and is located at the intersection of “the Belt and Road” at one vertical and one horizontal. It is a bridge connecting the Eurasian continent with the Pacific Ocean, the Yangtze River Delta and the Bohai Economic Zone. The Qingdao Port area is wide and has no ice and silt all year round. It is one of the natural harbors in China.

(2) The macroeconomic planning of the Chinese government and the development of the hinterland economy has provided strong support for the development of Qingdao Port. Qingdao Port has established long-term cooperative relationships with a number of international companies to ensure the supply of goods and maintain a continuous increase in throughput.

(3) Qingdao Port has now formed a three-dimensional collection and distribution system with ports and airports as hubs, railways and highways as the baseline, and connected to all parts of the world and countries.

(4) Qingdao Port has high production efficiency, container handling efficiency, and iron ore single-machine loading and unloading efficiency ranks first in the world.

(5) Advanced equipment and leading technology. At the beginning of 2019, Qingdao Port completed the verification of the world's first 5G smart terminal program, which injected new impetus into the construction of Qingdao Port's world-class “smart port”.

(6) The types of goods are complete. Qingdao Port operates a wide range of business projects with a wide range of projects, including coal, oil, ore, grain and containers, to provide customers with a caring service experience.

2.2 Disadvantage analysis
(1) There are many port fees. There are more ports and fees in Qingdao Port, and the fees charged by shipping companies and shipping agents are also higher.

(2) The multimodal transport system is not perfect. Due to the port function configuration of Qingdao Port, a large number of sea-rail intermodal containers need to be transferred to the old port area of Qingdao or the Jiaozhou Central Station by barge or railway operation, and the sea and iron cannot be completely seamless. There is still a lack of efficient coordination, which limits the development of multimodal transport.
(3) The internal structure of Qingdao Port is not very planning. From a strategic point of view, the internal layout is not suitable for long-term development. Pay attention to the planning of the logistics parks in the port area and nearby areas. Through reasonable layout, let them combine the two functions to maximize the effectiveness and facilitate centralized transportation and transshipment.

2.3 Opportunity Analysis
(1) Qingdao is an important part of the implementation of the “the Belt and Road” strategy and the strategy of the Blue Peninsula Economic Zone. It is cultivated and supported by the national and provincial governments, which brings rare opportunities for the development of port logistics.

(2) As the leader of Shandong's economy, Qingdao has a driving force for vigorous development, which can promote economic exchanges between the Bohai Sea and the Yellow Sea and between the central and western regions and Qingdao, and promote inter-city connectivity. Good factors for development.

(3) The government defines the logistics industry as an emerging industry and provides tremendous support for its development. Qingdao Port Group should seize the good opportunity of the modern logistics industry, give full play to the advantages of the port container transportation hub, and continuously improve the radiation function and comprehensive service functions of the port area, so that the port logistics industry will get a faster development.

(4) The promotion of infrastructure construction in Shandong Province. In terms of railways, Shandong has built a “three vertical and three horizontal” rapid passenger railway network. By 2030, it is expected to achieve the goal of 9,000 kilometers of railway business area and 5,400 kilometers of express railway. On the highway side, in order to support the development of port logistics, the Shandong Provincial Government has systematically planned and constructed the high-speed network. In terms of water transportation, the Shandong Provincial Government has systematically and accurately positioned the sea and river transportation, and provided water transportation support for the development of port logistics.

(5) China's rapid development in cloud computing, big data, Internet of Things, 5g and other new technologies will provide strong support for the construction of Qingdao's smart ports, which will enable Qingdao Port to occupy a dominant position in the competition.

2.4 Threat Analysis
(1) International competition is fierce. After the “Belt and Road Initiative” proposal, the volume of domestically lived Central Asia and Central Europe surged, but the goods transiting China were subject to strong price competition by Russian railways. The transit goods were heavily changed to Russian railways. In general, Qingdao Port is at a disadvantage in terms of price.

(2) There are intense competitions in the hinterland of the port. Qingdao Port is close to Tianjin Port, Dalian Port and Lianyungang port. Their hinterland is partially overlapped and the competition in the hinterland is extremely fierce. Compared with the highly developed provinces, such as Shanghai and Guangdong Province, the direct economic hinterland of Qingdao port--- Shandong Province still has a large gap.

(3) The threat of large-scale development of ships. As the level of trade development has deepened, the requirements for the level of ship carrying are also constantly increasing. This trend has made the volume of ships increasingly larger, and the increase in the volume of ships has also brought new and higher requirements for ports infrastructure.

(4) The rise of modern logistics industry poses a threat to the port service function. Qingdao Port wants to develop port logistics, we must keep up with the pace of the times, and keep up with the rapid development of the logistics industry is also one of the challenges facing the port.

(5) The threat of slowing economic growth. From a global perspective, the economy of most developed countries is weak, and this weak state has seriously affected the supply of Qingdao Port.

In summary, the advantages, disadvantages, opportunities and challenges of Qingdao Port are shown in Table 1.
Table 1 Advantages, Disadvantages, Opportunities and Challenges of Qingdao Port Development Logistics

| Advantage | Disadvantage |
|-----------|--------------|
| S1 port excellent natural conditions | W1 port miscellaneous fees |
| S2 superior location conditions | W2 multimodal transport system is not perfect |
| S3 superior collection and distribution system | W3 Qingdao port loading and unloading process is more complicated |
| S4 has a full range of goods advantages | S5 port production efficiency advantage |
| S6 advanced equipment, leading technology | S7 modern integrated logistics services need increased threats |

| Opportunity | Threat |
|-------------|--------|
| O1 implementation of the “Belt and Road” strategy | T1 international competition is fierce |
| O2 The rapid development of Qingdao’s comprehensive economy | T2 hinterland is fiercely competitive |
| O3 rapid development of logistics and other service industries | T3 threat of large-scale ship |
| O4 Promoting the infrastructure construction in Shandong Province | T4 modern integrated logistics services need increased threats |
| O5 modern integrated logistics services need increased threats | T5 threat of slowing economic growth |

3. Qingdao Port Logistics Development Layout

In the development of “the Belt and Road”, Qingdao Port should give priority to the development of inland ports and shipping centers. On the basis of promoting the construction of inland ports and on the idea of “strategic, differentiated and focused” sub-regional advancement, a network layout with clear hierarchy, reasonable structure, and unified, should be build.

3.1 Strategic deployment, network expansion

Qingdao Port continues to promote the construction of new inland ports on the basis of the existing “inland dry ports” in Xi’an and Zhengzhou. At the same time, it will dock to the SCO and strive to establish an overseas “dry port area” in Central Asian countries.

3.2 Agglomeration elements, lifting functions

(1) Actively coordinate customs, national inspection, and shipping companies to settle in inland ports. The establishment of port unit supervision facilities and inspection facilities will lay the foundation for the inland port start-up business and the docking of the port. Apply for the shipping company to confirm the return of the inland port to create conditions for the development of inland ports.

(2) Actively create a perfect and smooth road and rail transportation channel. In particular, railway transportation must have the qualification of container handling stations to build a logistics channel with cost competitive advantages for inland ports.

(3) Actively strive for local government support policies. It includes a package of policies such as tax reduction, financial subsidies, and free highways to provide policy support for the development of inland ports.

(4) Building a smart port. The port wisdom is the development direction of the future port, and it is also the only way for the port industry to transform and upgrade. Through the application of technologies such as Internet of Things, cloud computing and 5G, it realizes informatization, networking and high efficiency in the three aspects of port modern logistics e-commerce, terminal loading and unloading, and group office management platform. At the same time, the information
system independently developed by the port should be transplanted to the inland port to form a “point-to-multiple” information management network platform to ensure the “no gap, no distance” information transmission and control between the inland port and the port.

4.Development Measures for Qingdao Port Logistics

4.1 Transfer mode, strong sense, upgrade port function
In order to develop the port logistics industry, we must first set up a scientific sense of logistics management. We should make clear the changing trend of the market, give quick and accurate responses, and strive to develop logistics value-added services. We should change from the port's basic logistics services to hinterland enterprises to providing customers with extended services such as cotton, rubber delivery platform, goods pledge, coal futures, and vehicle import, so as to enhance the soft environment for port competition.

4.2 “Integration” of land and port, carrying out sea-rail combined transport
Relying on the inland port, the connection between inland and coastal areas can be realized, and the connection between “Silk Road Economic Belt” and “21st Century Maritime Silk Road” can be realized. In order to enhance the radiation capacity of the inland hinterland, Qingdao Port should continue to lay out inland ports, gather the port's superior resources and management elements, and at the same time strengthen inter-governmental policy communication, and form a unified plan in the areas of management policy, industry planning, information platform, etc. Move the “sea outlet” to the “home gate” to achieve integrated operation.

4.3 Accelerate the development of sea-rail combined transport business
Multimodal transport is the key development area of China's 13th Five-Year Plan. If Qingdao chooses the “the Belt and Road” sea-rail combined transport force as its strength point, there will be the following direct and indirect benefits: increase the throughput of Qingdao port, created the image of Qingdao Port as a “the Belt and Road initiative Node”, increase the freight volume for the Qingdao Railway Station and create a “new bridgehead for the Eurasian Continental Bridge”.

4.4 Accelerate the construction of the Internet + smart port
As a meeting point of “the Belt and Road”, Qingdao Port should adhere to the development model of “modern logistics + finance, internationalization and internetization”, accelerate the application of advanced technologies such as 5g. Qingdao port should promote the growth of throughput, allocate port resources more reasonably, promotes information flow, capital flow and logistics cycle trough intelligentization, thus improving the comprehensive competitiveness and efficiency of the port.

4.5 Improve the overall level of service and shape the service brand
Nowadays, port development has turned to the fourth-generation ports centered on the supply chain service, and the focus of port logistics competition has shifted to the full-scale and diversified service level. Qingdao Port should fully rely on regional cooperation and port alliance to integrate logistics resources and provide supply chain comprehensive services. Qingdao port also should build a cohesive service culture, increase brand building, provide personalized services with brand characteristics, comprehensively improve the service quality of sea-rail intermodal transportation, and improve the customer loyalty.

5.Conclusion
Qingdao's location advantage and strength determine that it can make a difference in the “Belt and Road”. Participating in the “Belt and Road Initiative” is the trend and direction of Qingdao's future development. Qingdao Port should learn from each other's strengths, play the characteristics of Qingdao, participate in competition and cooperation at home and abroad, seize the new opportunity
period, give play to the advantages of Qingdao, and take advantage of the “One Belt, One Road” strategy to lay a good foundation for the further development of Qingdao Port.

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