



## The Development Mode of World Main Pivotal Port and Relevant Inspiration

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### Abstract

Port logistics has become an important ring in modern logistics chain. It possesses a vital position in modern economic life and exerts significant effects on the later. This paper explores the development of port logistics in three foreign main pivotal ports and studies their development mode, with the hope of providing with inspirations and references for China developing port logistics.

**Keywords:** Port development, Development mode, Inspiration

It was said that “by other’s faults, wise men correct their own”. In order to develop the port logistics, China should actively learn from foreign advanced experiences in this field. Their experiences and development mode serve as important inspirations and references for China in developing the port logistics.

### 1. The development mode port logistics in foreign main pivotal ports

#### 1.1 *The development mode of logistics in port of Rotterdam*

The port of Rotterdam locates on the estuary of the rivers Rhine and Maas in the southwest, Holland, facing the Strait of Dover, the busiest strait in the world ocean shipping. The port of Rotterdam is a pivotal port for ocean, land, and air transportation in the world. It is “a gateway” to a European market (Liyan Ding & Duo Zhang, 2003, p101). For many years, its throughput is always the No.1 in the world. In 2004, the throughput was 354,000,000 tons, being the No.3 in the world, realizing an increase of 8% than that in 2003. In 2004, the throughput of containers is 8,280,000, being the No.7 in the world, realizing an increase of 16.62% than that in 2003.

In one word, the development mode of logistics in the port of Rotterdam is a host-centered mode. Under this mode, the port authority possesses absolute freedom in business management and land use. It manages the land use concerning the port facilities, industries, and other equipments. Usually, the port authority can provide with some warehouses for common port logistics center. And the port authority is merely responsible for management and offering basic facilities and relevant services. It does not take part in the operation of this logistics center directly. In specific, the development mode of logistics in the port of Rotterdam has these characteristics as follow.

##### 1.1.1 The government makes out general development strategy and the companies operate independently.

In Rotterdam, the city government has the property right of land, coastline, and basic facilities. Under the city government, the port authority is in charge of port’s development, construction, and daily management. It is the port authority who programs the lands, docks, shipping lines, and other facilities in the port. The port authority sets up special logistics center, focusing on introducing and arranging industries related with the port. The private companies take part in the operation by rent. What they have to do is to purchase some machines, equipments, warehouses, and other assistant facilities in the port. By this way, more private companies have possibilities in participating in the port business.

##### 1.1.2 The match equipments and facilities in the port are perfect and efficient.

The port of Rotterdam has perfect match equipments and facilities and it also has electronic data interchange system and auto navigation system, achieving high modernization in its management equipments and operation methods. Fast and frequent custom services can guarantee the timely delivery of goods. And perfect transportation network centered on Rotterdam can radiate an area of 500 kilo meters around the port.

##### 1.1.3 The specialized logistics center possesses significant advantage of scale.

With limited port resources, the port of Rotterdam has built up and developed logistics center. In 1998, it set up a “delivering district” in order to develop specialized logistics service, which serves as a model for other ports in the world. These logistics centers adopt latest communication and information technologies, and possess sufficient, professional, and specialized labors. And they can provide with sorts of value-added services and other custom services at spot.

#### 1.1.4 The port-town-integrated international city and its modern port construction

As an important international trade center and industrial base, Rotterdam applies a strategy of “being a port that can enjoy greater freedom than a free port”. It is a typical port-town-integrated international city. There are about 3500 international trade companies or so and an industrial zone including oil refining, petroleum chemical industry, shipping building and repairing, port machine, and foods. In the arrangement of the port, Rotterdam takes the new shipping line as the center, other docks locating aside the main shipping line. And they are classified into specialized docks and multiple docks according to their functions, such as bulk cargo, containers, liquid goods, and raw oil. In general, the port of Rotterdam executes a “bonded area” system (It is also named as bonded warehouse area. It refers to special area and warehouse authorized by the custom or relevant institution. If foreign goods enter this area, they are free from custom taxes temporarily. And if these goods are exported, they are also free from custom taxes. But if foreign goods enter domestic market, they have to pay custom taxes.) (Changchun Yang & Yongcai Gu, 2003, p57).

#### 1.1.5 The port of Rotterdam has formed a logistics chain with the inland industry.

The port industry has become an important part of economy in Rotterdam. The port of Rotterdam is one the three largest oil refining bases in the world and is also a main chemical industry base. Many famous oil refining and chemical companies, such as Shell, Esso, Kuwait Petroleum Corporation, Akzo Nobel, and Eastman Chemical, have branches in Rotterdam. Besides, food industry is also an important section for port. For all these large European supermarkets, Rotterdam is their supermarket located bedside the ocean.

### 1.2 The development mode of logistics in port of Antwerp

Antwerp is the largest seaport in Belgian (Nian Liu, 2005, p57). And it is also one of largest ports that have a throughput of more than a hundred of million tons. Antwerp is an important portal for Belgian, Holland, Luxemburg, Germany, and France. And its location is near to the main center of production and consumption in Europe. In 2004, the port of Antwerp achieved a throughput of 152,000,000 tons, breaking its former highest record, realizing an increase of 6.6% than that in 2003. There into, the throughput of containers reached 6,060,000, realizing an increase of 11.4% (Wei Qian, 2006, p48).

In one word, the development mode of logistics in Antwerp is joint-funded logistics center. In other words, many joint ventures invest in the logistics center of the port. One of the advantages of this mode is its sufficient capital resources. On the other hand, by means of cooperating with foreign advanced logistics companies, it is easy for the port of Antwerp to grasp and master the world latest management technologies and operation methods. In specific, the development mode of logistics in the port of Antwerp has these characteristics as follow.

#### 1.2.1 The port of Antwerp is funded by the port authority and the private companies together.

In the construction of the logistics center in the port of Antwerp, the investments of the port authority chiefly focus on its infrastructures. Its logistics, land exploration, and shipping business are operated by private companies.

#### 1.2.2 The perfect infrastructure serves as nice condition for the development of logistics center.

The port of Antwerp has excellent hard infrastructure. It has different kinds of warehouses and specialized equipments, and many kinds of industry development zones, including oil refining, chemical industry, petrification, auto parts, and ship repairing. Besides, the port of Antwerp possesses excellent electronic data interchange system that can greatly improve the work efficiency and logistics efficiency. Besides, the port of Antwerp expands its region in order to meet greater needs and provide with guarantee for the future.

#### 1.2.3 Perfect transportation network guarantees the frequent flow of goods.

The port of Antwerp has built up trade relationship with more than one hundred countries step by step. It has more than three hundred shipping lines and connects with more than eight hundred ports. Besides, it has dense highways which directly connect with the express net in Europe. And the port of Antwerp is the terminal of twelve international railways.

#### 1.2.4 Develop the port industry and expand its inland industry.

The port of Antwerp is famous for its dense industries. It is the second largest industrial center in Belgian. And the port of Antwerp has wide land resources, including Belgian, the North of France, Lorraine, Luxemburg, Saarland in Germany, and part of Holland.

#### 1.2.5 The government changes its administration way.

Before 1997, the port of Antwerp was governed by the city government directly. The port authority was merely a branch of city government instead of being a legal entity. After 1997, the port authority reforms its system, becoming a common legal entity whose 100% stocks are controlled thoroughly by the city government. By this way, the port authority realizes complete independent operation, program, and management. It has more freedom in human resources, finance, and management decision.

### 1.3 The development mode of logistics in port of Singapore

The port of Singapore locates in the north of the Singapore Island. Its excellent geological position is important for its fast development. In 2004, its total throughput reached 388,000,000 tons, being the No.1 in the world, realizing an increase of 11.6% than that in 2003. And there into, the throughput of containers reached 21,330,000 in 2004, realizing an increase of 17.85% than that in 2003, merely after Hongkong being the No.2 in the world,

The development mode of logistics in the port of Singapore has both features of the supply-chain logistics center and the united logistics center. The supply-chain logistics center is combined by port logistics companies and shipping logistics companies. Under this mode, different parts can cooperate together and form a close logistics group to operate the shipping and logistics business. The united logistics center is formed by port and bonded area, or the city. In general, the development mode of the port of Singapore has these characteristics as follow.

1.3.1 The government directly invests in the construction of port infrastructure and applies the “free port” policy to it (Free port, or free trade zone, locates outside of the custom border, in which the export goods or most of export goods are free from custom taxes. Besides, it is legal to store, exhibit, break up, change, repackage, tidy, possess, and produce goods in this region. By this way, it benefits the local economy and the foreign trade, increasing the finance income and exchange income.) (Changchun Yang & Yongcai Gu, 2003, p54)

The Singapore government insists in investing in the port directly, which guarantees its advantages in port program and construction, and the supreme position of the port of Singapore in the international shipping field. Besides, Singapore government applies a free port policy to the port, and adopts many other favorable measures in order to abstract more world shipping companies. By this way, its position, as the center of world shipping, is stable.

1.3.2 The port of Singapore has clear job division and applies an integrated operation.

The port of Singapore has three distribution centers, namely Pasir Panjang, Sembawang, and Keppel. The Keppel distribution center is in the bonded area. It chiefly provides with storage, transportation, taking samples, testing, OEM, package, and other services. The Sembawang distribution center is a center for classifying goods, chiefly focusing on autos, large equipments, and steels. The Pasir Panjang distribution center is a center for transferring specialized autos.

1.3.3 The logistics operation and management realizes high modernization.

The port of Singapore makes best use of high-tech in logistics operation and management. It possesses the auto identify system, electronic turnstile system, auto bridge crane, and other advanced equipments. Besides, it has convenient electronic data interchange system, ensuring the safe and timely flow of information, increasing the logistics efficiency and optimizing the logistics management.

1.3.4 Cultivate the logistics chain for the port actively.

The port of Singapore emphasizes the development of port industry, insisting in combining the port industry together with the inland industry. And it always focuses on the construction of the port region and attracting foreign capitals by providing with some port land and docks for transnational companies to use as transfer terminals, and encouraging they setting up logistics centers and distribution centers in the port. At the same time, the port of Singapore lays stresses on the development of port industry, such as petroleum, chemical, and shipping, in order to cultivate a logistics chain in the port.

1.3.5 The diversified logistics services

The Port of Singapore Authority deals with not only its chief business, namely operating the port and docks, but also provides with many multiple value-added services, such as IT, logistics, supply-chain, and shipping.

## 2. The inspirations from the development of logistics in world main pivotal ports

The inspirations from the development of logistics in world main pivotal ports and their operation and management modes for China's logistics development in ports are as follow.

### 2.1 Lay stresses on the port management and program it rationally.

The management mode can exert significant effects on the development of logistics in the port. World ports' management modes can be classified into three types (Liang Jia, 2004, p42-43).

- (1) Operate merely by private companies
- (2) Joint-operate by government and state-owned companies
- (3) Joint-operate by government, state-owned companies, and private companies

Among the three modes mentioned above, the third mode can balance the authority control of government and the business operation of private companies, taking both social benefits and private interests into consideration, overcoming the deficits and limits of the mode in which the port is solely controlled by one part. In recent years, more and more countries adopt the third mode in the port management.

### 2.2 The driving effects of government on the port logistics

The driving effects of government on the port logistics includes these aspects as follow. The first is the macro management and the constitution of relevant laws and regulations. For example, as a typical market economy country, America turns the macro plan into market signals, which can indirectly influence the decision of logistics companies. Besides, although Japan is a market economy country, the government exerts an evident effect on the market. The corporate decision is dominated by both the market and the government. Secondly, program the general development of the port and make up development strategy. For the sake of general interests of the port, the government should make an overall program to increase the scale benefits of logistics operation. Thirdly, invest more and more in the construction of logistics infrastructure in the port. Fourthly, emphasize logistics education and talent training, which can provide with more excellent specialized talents for port logistics. Fifthly, provide with nice services for logistics companies in the port. The government should construct perfect administrative institutions and operate with higher efficiency. Favorable policies, valuable consultations, and timely custom services can contribute to the fast development of modern logistics in the port.

### 2.3 The positive effect of logistics industry association

The positive effects of logistics industry association in foreign countries are as follow. The first is the guiding and driving effect. The second is the consulting and service effect. The third is the education and training effect. The fourth is the industry regulation effect. The fifth is the communication and connection effect.

### 2.4 The right position of modern logistics development of port

The modern logistics of international pivotal port develops toward the integrated and overall trend. The overall development means multiple value-added services provided by the logistics center in the port. The integrated development means the integration of logistics companies and the integration of the port industry and the inland development.

### 2.5 Enhance the cooperation with shipping companies and develop containers business.

The popularization of containers and the large scale of container ship demand for deeper lines, wider docks, and higher efficient loading equipments. And they exert profound effect on port logistics. Because of the large expenses and higher risks in constructing a new or rebuilding the container dock, many port companies choose to cooperate with shipping companies in order to reduce the risks in venture.

### 2.6 Construct an international logistics center

Constructing an international logistics center can improve the port's world competitiveness, perfect the port's and the city's information service, and enhance the connection with inland, driving the development of port industries and related inland industries. By this way, it can push the development of the local economy and even the general development of the national economy.

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