The Port-neighboring Industry Development in Nantong Based on the Port Advantages

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Abstract

As the appliance of the integration process of the Yangtze River Delta and the Shanghai Combined Ports strategy, Nantong, which locates in the Jiangsu riverbank development zone and in the eastern oceanic Jiangsu construction areas, is paid great attention to because of its special location advantage. Thus how to make good use of the outstanding port and coast resources to develop the advantage of the river-ocean cooperation and to stimulate the development of the port-neighboring industry has become a highlight.

This article first analysis the current situation and problems of the development of the port-neighboring industry in Nantong. Then in applying the interaction theory of the port and the city to the development facts of Nantong port, a development plan for the port-neighboring industry zone is proposed. The development strategies are that Nantong should focus on the value added activities of the ports, the characteristic industries and the modern logistics, and by optimizing the industry structure pattern to promote the overall development of the regional industry. What’s more, four suggestions are proposed as to the development of the port-city interaction, to prolong the industry chain, to strengthen the relationship between the port-neighboring industries and other industries.

1 Introduction

Nantong city locates at the northern bank of the downstream of the Yangtze River. It is at the cross point of the “T” shape economic zones that are along the Yangtze River and along the coast. Nantong port has the characteristics of both the ocean harbor and the river port. It has the coast line of 203 km and the Yangtze River bank line of 166 km in which more than 40 km coast line can be used for the 50,000-ton berths and more than 30 km Yangtze River bank line can be used for the 10,000-ton berths. Up to year 2002 Nantong port has had 92 docks, among which 28 are more than 10,000-ton. Nantong port has seven ports areas, including Langshan port, Nantong port, etc and two port station of Qinglong and Qidong. As the first-class opening port of our country, Nantong port has become the main hinge port for the import and export trade of Yangtz River delta and upstream areas
and had navigations with 199 ports of 65 countries and areas of the world. In 2003 Nantong port had 47.13 million tons of the cargo throughputs, 247 thousand TEU of container throughputs, 70.73 million tons of transportation freight amounts and 5.03 billion t·km of freight turnovers.[1]

The outstanding port and coastline conditions of Nantong city offer an excellent opportunity in the conduction of the exploiting the riverbank strategy of Jiangsu province. The unique advantage of location and the development foundation of the ocean-neighboring industry of Nantong city make it capable of using the interaction affect of the gradient procession and anti-procession, in order to expand the depth and the extent of the development and to achieve the inter-accelerate of the development of the riverbank zone and the coast zone. In this strategy, the development of the port is the key element for the appliance of the strategy. The development of the port-neighboring industry is of important significance for the appliance of the river-ocean cooperation strategy of Nantong city.

2 The Current Situation and Problems of Nantong Port-neighboring Industry Development

2-1 The Exterior Environment Analysis of the Development of Nantong Port

2-1-1 The Formation of the Big Shanghai Economic Circle

On 1960 the Yangtze River delta area, with the Shanghai as its core, was listed as one of the biggest cities in the world. Now this area has 100 thousand km2 and 72 million people, and has 14 cities, 13 regions, among which 3 cities has the population of more than 1 million, 4 cities has 0.5-1 million, 6 cities has 0.2-0.5 million. The Big Shanghai Economic Circle has become an economic system. Cities there connect each other, just like Tokyo- Yokohama, Osaka-Kobe, and take part in the international competition. This has offered precious city cluster resources for the development the Nantong port.

2-1-2 The Combination and Acceleration of Yangtze River Delta (YRD) Economy

The area of YRD is only 1% of the whole country, the population 6.25% and the total industry output 21%. YRD area is one of the areas in the country that develops the fastest, has the best investment environment, the best economic inner diathesis and the strongest innovation ability. These cities have the same history and the similar human characteristics and keep good intercommunion of both people and economy. These cities have comprehensive common interests so that they can develop together.

2-1-3 The Quick Construction of the Shanghai International Shipping Centre

After 8 years of construction, Shanghai has gradually had the functions of the international shipping centre, such as the port condition has been improved, the shipping production elements have been assembled to Shanghai, the shipping
marker has become normative and the shipping information exchange centre and the shipping policy research centre have been formed. In April 2002, the biggest and the most-developed 6th-generation container ship, Shanghai Express Shipping, chose Shanghai as its first station of the virgin voyage. In 2003, the container throughput of Shanghai port was 11.28 million TEU. Shanghai port became the third biggest port of the world.

Shanghai port can’t develop so fast without the great support of its vast hinterlands. Shanghai locates at the most developed area of YRD whose GDP per person is more than twice of the average country level. It is forecasted that by the year 2005, the direct and indirect economic hinterland container amounts of the Shanghai port will have been more than 15million TEU.

Nowadays in the new ocean economy, making great use of capital operation means, Shanghai port combines the competition and co-operation and carries out the broad zone co-operation strategy of changing the competitors into companies. In the July 2002, the enterprise Shanghai Port Container participated in 45% share-holding with the Ninbo Daxie Port Corporation and setup the Ninbo Daxie Development Zone Jixin Logistics Ltd. Shanghai has taken the first step of managing docks and Jiujiang, Yangzhou and Luzhou ports have all expressed their will of co-operation.

2-1-4 Planning the Highways on the Northern Bank of Yangtz River and Improve the Appliance of the Riverbank Development Strategy

Although all in the Jiangsu province, the three cities of Nantong, Taizhou and Yangzhou in the middle part of Jiangsu have obvious difference with the 5 cities in the southern part: the three cities in the middle part have the total area of 42% of the 8 cities along the river and the population 45%. While in 2003, the GDP of the southern Jiangsu was 3.4 times of the middle Jiangsu, the financial revenue, the industrial value added, the foreign capital used are respectively 4.7times, 3.8 times and 15.9 times. The economy of Jiangsu province is actually half the river situation.

2-1-5 Bridge Constructions at the Essential Places

The constructions of bridges at the essential places- the Runyang Bridge under construction, the forthcoming Sutong Bridge, the Chonghai Bridge in the planning, will join the highways along the river of the southern Jiangsu and the middle Jiangsu and form the north and south paralleling and connecting express passages.

Sutong Bridge is between Nantong city and Suzhou(Changshu) city. It is about 82 km away from the Jiangyin Bridge and 108 km from the outlet of Yangtz River. After the construction, it will take less than 1 hour from Nantong to Shanghai, compared with more than 3 hours in the past. Form Yancheng to Shanghai, the distance will be reduced from 310 km to 260 km if taking the Sutong Bridge instead of Jiangyin Bridge and the highway along the river. This bridge will have great effect for the connection of the northern Jiangsu and the southern Jiangsu, accelerating the capital, human resources, material and information communication of the middle
Jiangsu, northern Jiangsu with Shanghai and the southern Jiangsu and accepting the radiation of Shanghai economy. The construction of Sutong Bridge will reduce the distance between Nantong and Shanghai, the southern Jiangsu and make Nantong enter the economic circle of Shanghai and immit new energy for the industrialization, urbanization and modernization of Nantong, the middle Jiangsu and the northern Jiangsu. Tongsa(from Tongjiang city in Heilongjiang province to Sanya city in Hainan province) national road will pass the Sutong Bridge. The construction of the bridge will create good condition for the golden corridor of the west coastline of the Atlantic Ocean.

The Tongjiang highway will take Sutong Bridge instead of Jiangyin Bridge. Once the cross -river tunnel of Shanghai and Chongming and the bridge connecting Chongming and Haimen run through, Shanghai and Nantong will be closer. With the bridge Nantong can involve in the southern Jiangsu and Shanghai economic circle and improve its regional competition ability. Nantong will develop into a comprehensive big city and with the new passage of Sutong Bridge, Nantong is capable of becoming the side-city of Shanghai.

The infrastructure construction in the YRD area has been continually changing the conception of time and space and the regional economic radiation has had new patterns. Now the three-port two-net of Shanghai- the international airport, deep-water port and information port are all under construction. The infrastructure construction of Pudong Airport and the large and small Yangshan deep-water ports make the radiation axes changing form the shape of the character 之 to the shape of the reverse K, including the middle Jiangsu, the northern Jiangsu and eastern areas of Zhejiang province.

The reverse K is specifically the formation of the eastern, southern, western and northern Shanghai. The eastern Shanghai is the well-developed Pudong. After the construction of Hangzhou Bay Bridge, the construction of the large and small Yangshan ports and the oil chemical zone will extend the southern Shanghai from the Xinghuo Farm in the past to the southern area of the Hangzhou bay. The western Shanghai is the development of Shanghai to Suzhou and Wuxi. These three directions have all developed very well while the northern Shanghai is still in the process of formation, especially after the construction of Sutong Bridge, the new pattern of the northern Shanghai of Shanghai, Chongming and Nantong will be foreseen.

2-2 The Current Situation of the Port-neighboring Industry Development of Nantong City

From the historic aspect, Nantong port mainly dealt with large amount of bulk cargo such as raw materials, energy sources, etc and now it has become the important energy sources, raw materials and chemical bases and an important port on the Jiangsu wing of the Shanghai international shipping center. What' more, making use of the advantage of the port into the international market to setup the port-neighboring industry system is one of the ways for the development of many port cities.
Taking advantages of Nantong’s location, developing the port industry and improving the Nantong industry into the international economic circulation are the measures for increasing the competition ability of Nantong industry. Now five industry bases—electricity, modern spinning, vessel repairing and manufacturing, fine chemical engineering and grain and oil machining, have been formed. From the aspects of the natural condition and the historical foundations for the industry development in the port-neighboring zone, the development of the port-neighboring industry will continue to focus on the second industry while at the same time accelerate the development pace of the third industry. With the support of the technique advancement, the new high-tech industry needs to be focused in order to cultivate new brace industries and economic point of growth.

2-3 The Development Characters and Limitations Analysis of the Port-neighboring Industry Cluster of Nantong City

2-3-1 The Port-neighboring Industry has Strong Port Directivity and Scale Directivity

The port directivity means using the bank line resources to make investments and productions and using the cheap water transport conditions and the port logistics to make the distribution of raw materials and manufactured goods. On the other hands, since the port mainly deals with energy sources and raw materials production, whose key element of the development is the scale economy effect, the port industry has strong scale economy effect. Capital concentration and technique concentration are the character of the port industry. Large scale of investment, territory and production are its character. Now the port directivity is stronger than the scale directivity of the Nantong port industry. However, as the appliance of the 10th five-year planning, the seven development zones along the river have attracted 14 world top 500 companies up to now. The frontier zone industry along the river has 14 billion yuan of value added and 46 billions of selling revenue, taking account of 59% and 58% of the similar industry in the city. But the scale economy effect of the Nantong port-neighboring industry is mainly expressed in the oil chemical engineering and the vessel manufacturing, while the scale economy effect of other industries need to be increased.

2-3-2 Weak Relations of the Industry Pattern

As port industries, except the fundamental electricity industry, the energy sources and raw material industries seldom connect. But in the process of planning, the concentration location pattern of similar type industries should be paid enough attention, for this is convenient for the inner-industry co-operation and the environment governing. Because attracting bid for investment is the main mode of exploiting, usually the investors choose the place and their wills are satisfied for the sake of the project. Thus big projects often take the room of the bulk cargo docks and the container berth so that it is not good for the development of the port. The central city areas and the port areas being surrounded by the big projects influence the growing of the container and the city area functions. The decentralization of the spots distribution is not convenient for the compact usage of the land sources.
Since big investment and long period of construction are the characters of the port industry, it has a large sum of sunk cost so that it's hard to transform.

2-3-3 Short Industry Chain and Weak Relations with the Regional Manufacture Industries

The port industry is developed basing on the advantage of the port, but its final development target is to supply the energy sources and raw materials for the regional development. At present the port industry is at the primary stage of the growing. The industry chain is short and except for the electricity industry, it almost adopts the machining mode and has little extension into the inner region. Thus in the long run the manufacture industry will be influenced by others. Therefore, the scale economy advantage of the port industry should be used to create the technique advantage and stimulate the port industry to develop in the vertical deeper direction.

2-3-4 The Industry Techniques Mainly Rely on the Outside

Now the port industry is characterized the Ford's-like production. The production techniques are expressed by the assembly line. That is to say, the production machines show the production techniques. The industry production techniques come from the investors and the facilities so that they have strong reliance and characterized the colonial economy. Besides, the port industry is the concentration place of the human resources in Nantong city, for the port industry has a strong require for the good human resources and it also has good economic attractions. The technique transformation of the port industry needs large capital of investment and the main techniques have slim possibilities of transmit within the industry cluster. That is greatly different from the technique creations of the middle and small enterprises, which have strong sharing nature.

2-3-5 The Strong Region Rooted Nature

The port industry has the characters of the big investment, the strong capital specific usage, the large sunk fixed capital and the immobility after the investment. Hence the multinational corporations are usually very cautious on the investment on the heavy chemical engineering industry so that the attracting bid policy supports should be reinforced. The rooted nature of the port industry can be weakened by the acceleration of the fixed capital depreciation to increase the mobility of the capital. What's more, to strengthen the relations between the port industry and the Nantong traditional manufacture industry can form the result-in demand of the port industry development and make the port industry rooted in the whole region. Make use of the demand to stimulate the technique upgrading of the port industry to improve the overall regional competition level. However, Nantong port still has some deficiencies in the deeper industrial relations.

3 The Interaction Theory of the Port and the City

From the international aspect, ports are always considered as the increasing points
of the regional economy because of their growing-point effect that have the forward and backward pulling effects to a large scale of related industries. The port and economy, the port and city are closely related and mutually promoted. Among the top 35 metropolises 31 are near the river or near the ocean and the top 10 economic center of the world are all port cities that near the river or near the ocean. The case that the domestic developed regions all locate at the eastern coast area is also a proof that the modernization is more and more reliant on ports. As the infrastructure, ports have inevitable effect for the development the regional economy. The belonging nature of the ports makes the city capable of using the location advantage of the port to setup industrial zones, development tariff-protecting zones, port-neighboring logistic zones and various kinds of service industries around the ports to increase the financial revenue of the city, to expand the employment and to improve the competition ability and the international influence of the city.

The potential advantage of the port determines its special position in the economic development. The general law of the development of the port cities home and abroad is that the prosperities of both the city and of the port are mutual-dependent. The developed areas make sufficient use of the port condition to participate in the economy globalization to a wider and deeper extent, to carry out the strategies of the diversion of principal part of the foreign trade, of the export market, of the export goods, and of the trade manners, in order to make the strategy the important support of the stimulation for the rapid growth of the national economy. The opening type of economic growth is the inevitable path for the development of an area or of a central city. The development of the port will make the growth of Nantong. Thus in front of the new develop opportunity, Nantong should make good use of the port, the opening economy and the attracting bid for investments.

In the environment of the regional competition for development, Nantong should take the ways of compete for differences facing the good opportunity of the riverbank exploitage and the river-ocean cooperation. It is important to pay more attention to the concordance of the characteristic resources to exert the comparative advantages and to take the preemptive place in the intense competition for development. With the leading effect of the port, Nantong should realize the cooperation and the development by the ways of the extension of the industry chain, the industry matching and the sharing of the resources so as to build the overall advantage of the regional development that has strong cohesive forces and radiative forces.

3-1 The Growing Stages of the Relationship between the Port and the Regional City

Ports and cities have obvious difference, which comes from the fact that two special objects must co-exist in a limit space. As a link in the transportation chain, ports serve the functions of economy, the production efficiency, the market competition, the industry activity scale and the business development; while as a community with the residents, cities want to continually increase the welfare and the life quality of their citizens so that what cities care is the environment values and the expectations of the people. The difference in visual field of the port and the
city results in the conflict in the compatibility of the engineering infrastructures and the functions of these two activity centers.

However, as a systematic concept, the city and the port can make achievements if they have a definite framework in the cultural, economic and special relations and operate together. Therefore, by the push of the interest, the port and the city will become companies in the long run: the port promotes the development of the city, increases the employment opportunity and develops new relations with remote countries; while the city offers managing and technique supports to the port. At any case this kind of active interaction will be an inevitable condition in the present situation of the economic globalization, the market mutual dependence and the multi-shipping dominance. For the sake of successful competition, the port needs to be able to enter some of the city fields easily such as information, communication, finance and applied research. Hence the competition ability of the modern port not only relies on its inner functions but also relies on the economic efficiency of the related city, including the co-development policy of the port and the city. In a word, ports today need unprecedented supports coming from the located cities. The growing process of the port and the city is shown in Table1.

Therefore, the relationship between the city and the port development is complicated, from confliction at the beginning to the mutual-dependence at last. As the development of the two, their relation will go into a stage of coordination. For example, in Belgium and in Netherlands, ports are an organization of the government and they keep good relations, and in the city of Rotterdam, the port-city planning bureau take part in the process of the planning of the port and the port management department join in the establishment of the city space plan. The economic development of a country or a region is proportional to the development of its foreign trade. The more opening, the stronger demand for the port. In order to satisfy the demand of the economic development of the city, as the leading industry, the port should give full scope to the socialization function effect to stimulate the development of the social economy and to become the growing point of the economic development of the city. Of course, the development of the port needs the development of the city economy to supply with sufficient goods and the supports of overland transportation, inland river transportation net, finance, information and the matching engineering project of the government. The bigger the port is, the stronger it needs for the support from the city.
<table>
<thead>
<tr>
<th>Potential conflict sources</th>
<th>Reasons for cooperation</th>
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<tbody>
<tr>
<td>A · Daily friction</td>
<td>A · Contribution of the port to the development of the city</td>
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<tr>
<td>◦ Noise</td>
<td>◦ Direct employment</td>
</tr>
<tr>
<td>◦ Pollution</td>
<td>◦ Indirect employment and economic development chance (light industry, new tech industry, business zone, distribution industry, logistic zone, tourism industry, etc)</td>
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<td>◦ Industrial safety</td>
<td>◦ Relation with the world by the multi-shipping</td>
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<td>◦ Visual influence of the port working</td>
<td>◦ Communication with the foreign economy and culture.</td>
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<td>◦ Traffic congestion in the city</td>
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<td>◦ Limitations on the flow of the goods</td>
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<td>◦ Other physical and functional interruptions</td>
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<tr>
<td>B · Usage of the special control</td>
<td>B · Contribution of the city to the port</td>
</tr>
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<td>◦ Expansion the port area</td>
<td>◦ Good services in the following fields:</td>
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<tr>
<td>◦ Entry of the coastline</td>
<td>Finance, management consultation, technique support, applied research, information communication</td>
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<tr>
<td>◦ Reopening of the coastline</td>
<td>◦ Services related with the ocean shipping and the port</td>
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<td>◦ Usage of the deserted industrial lands</td>
<td>◦ Support for the competition of the port</td>
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<tr>
<td>C · System relations</td>
<td>◦ Offering comprehensive logistic activity space and inland transportation link passages</td>
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<td>◦ Exclusion of the decision of the city for the development of the port</td>
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<td>◦ Special law giving the priority of the port over the city</td>
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<td>◦ Priority of the external interests in the management of the port</td>
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3-2 The Integration of the Port and the Regional City

The integration of the port and the regional city is accomplished in the process of the mutual penetration and mutual association. The development of the port-neighborhood zone has important effects to the integration of the port and the regional city and it is also the support system for the healthy development of the port and the regional city. The concrete relations are shown in Figure1:
For port cities, ports must be used as a specific area and be supported in the policies to make it the development extreme that can drive the development of the industry structure of the port cities. The concept of the development extreme is proposed by a French economist, who thinks that the economy doesn’t grow at the same speed in the whole city. Instead, the fact is that the rapid growth of some department in some region drives the overall development. These departments and regions become the development extreme that drive the economic development. The development extreme should be chosen in the port and the port area because they have the best condition for turning into that.

Some experiences in some European countries and in Japan show that ports should be taken as the important infrastructure of the social economy of the country and of the city. Besides the function of the water-overland transportation hinge, the port should also be taken as the important condition for promoting the development of the industry structure of the city. The developed countries do not require direct economic interests from the construction of the port investment. Instead, they put the planning and construction of the ports into the overall planning of the industry development of the city.

In the long run, the ports must be used as the core link of the development of the industry structure of the city. Efforts should be taken to draw the industry, business, trade and finance closer to the port in order to realize the multi-function of the port and the port area and to make the port area become the comprehensive economic area containing various industries. Thus the industry structure of the city can develop rapidly with the value added investment and the port and the city can have good integral development.

3-3 The Influence of the Port to the Regional Sustainable Development

First of all, the research on the influence of the port to the regional sustainable development can be divided into three stages:

The primary stage (1953-1978). In this stage, the port industry was defined as “any economic activity that is needed directly for the movement of the water-transport
cargos” for the first time. In the USA, every $1 selling revenue of the port industry can bring $1.6 selling of the national economy.

The standardized primary stage (1979-1985). In this stage, people became more aware that the total economic interests created by the port functions should not be weighed by the direct influence of the port industry and the port activity but must include indirect and inducing influence, which is the economic multiplier effect. The amount of the multiplier is determined by the economic structure, scale and the diversion extent of the port’s location area. The compactness extent of the relation of the two is determined by the ability of the satisfying goods and service needs of the local economy. The indirect influence can be estimated by the economic foundation multiplier, the inter-regional trade multiplier or the input-output model. The social interests of the port can be divided as the direct interests and the indirect interests. The direct interests are the interests created by the port itself and the direct-relating activity with the port, such as the dock managing, the vessel proxy, the inner land distributing transportation, etc. The indirect interests are the cost saving created by the corporations that have some relations with the port.

The standardized maturity stage (1986-). In this stage the measurement-economic influence-used for measuring the importance of the port to the surrounding areas’ economy was proposed. The economic influence means that a set of economic affairs that are used for identifying some level of the final economic demand, including the buying ability, the income, the employment and the taxation. The economic influence of the port activity includes three aspects: (1) direct influence: the first round fees and employment opportunities created by the direct activity of the port; (2) indirect influence: the influence to other industries and service industries by the direct activity, including the inter-industrial economic activities resulted from buying supplied goods, services, labors and other investment materials. (3) inducing influence: the economic activities created by the buying household items and services because of the incomes from the direct and the indirect activities.

Besides, the research on the influence of the port to the regional sustainable development can be divided into three levels:

The research on the influence of the port to the regional sustainable development can be divided into three levels of the country, the region and the city. The appliance of the input-output model can quantitatively analysis the economic relations of the ports with other department if the national economy. The social interests analysis of the port to the region can use the method of sampling investigation to make the research on the interests obtained by three different industries through port activities. The first type is the inevitably needed industries for the ports, such as loading and unloading companies, dock companies, vessel repairing factories, port services, government department, distributing transportation on land and cargo transportation agencies that are directly related with port activities. The second type is port attracted industry. If the establishments of the port can not be used, these industries will move to other place. The third type is the port-related industry. No matter whether the port exists, they will remain in the former place, just that their goods will no longer export from that port. Through the relation between these industries and the port activities, the mutual influence
can be calculated. The research of the port to the social interests of the city is similar to the above two occasions.

As the development of the port economy, the research on the mutual influence of the port economy and the regional economy will be gradually deepened. Especially the research abroad goes from lacking of mature methods at the outset to having a whole set of complete research system at last. This gives us good references when we are doing the research on the sustainable development of the Nantong city with the support of the ordinal management of the port resources.

4 The Development Planning of the Port-neighboring Industry in Nantong

According to the central effects of the port, the industry structure of the port city can be divided into: the direct industries of the port (all the industries managed by the port), the related industries of the port (the industries relating with the port activities, such as the ocean shipping industry, the distributing transportation industry, storage industry, etc.), the dependent industries of the port (the industries that are setup mainly because of the conditions of the port, such as the vessel manufacture industry, the trading, the steel industry, the oil chemical engineering industry, etc.), the derivative industries of the port (the industries that are setup near the sea and have some relations with the economic activities of the direct industry, the related industry and the dependent industry such as finance, insurance, real estate, business, etc., and the non-related industries of the port.

Therefore, the dependent industries have the strongest relations with other industries and make full use of the advantage condition of the port to promote the development of the derivative industries. The experiences from the developed countries show that the development of the industry structure of the port city may choose the dependent industries as the target to drive the development of the direct industries and the related industries, to increase the employment and income rations and to develop the industry structure of the whole city.

According to the above analysis about the functional determination of each port area of Nantong port, the development and the layout of the port-neighboring industry zone can be constructed as follows:

4-1 Pay Special Attention to the Value Added Services of the Port

The port is always the important node of the logistic system. The production globalization makes the port’s value added effect more and more important in the supply chain. The ports are the combination surface of the inter-continent transportation while the inner land points are for production, assemblage or final distribution. The ability and the efficiency of the port greatly influence the choice of the location determination of a factory or a distribution centre, and usually determine whether the local manufacturer can compete with the global or other local manufacturers as well. This challenge requires that the port should pay more attention to the needs of the customer and help the customers to increase their
competition ability through supplying low cost and efficient services.

From the port aspect supplying new services can improve the economic performance of the port and create stronger attraction to the now and the potential customers to maintain and even increase the competition position of the port. When estimating the added services of the port, the potential value-added effect should be emphasized and the potential of the added value changes as the production and the activity change.

The value-added services of the port can be divided into value added logistics and value added facilities. The value added logistics includes the general logistic services and the overall services of the logistic chain. The general logistic services include cargo loading and unloading, storage, distribution, etc. They are traditional logistic activities that have no influence to the quality of the product.

Besides these traditional activities, more complicated logistic supply chain integral services are now developing in the port. The supplier of the logistic services can accept the activities that the manufacturers do no take as their main activities in the production chain, such as assemblage, quality control, customerization, wrapping, repairing and some post-selling services. However, the logistic supply chain integral services are only suitable to certain kinds of goods, such as electrical goods, medicines, clothing, foods and mechanical goods.

The second type value added services are value added establishments, including various kinds. These services can not be classed according to the type of the production or the cargo flow. Their potential of the added value can be estimated by the analysis to the cargo flow, such as what kind the cargo flow is, dry cargo, liquid cargo, sundries, containers, etc.

4-2 Emphasize on the Development of the Characteristic Dependent Industry of the Port

Nantong should make good use of the riverbank exploiting strategy of Jiangsu province and the opportunity that the international industrial capital moves to the Yangtze River delta. It should use the existing resources fully and emphasize on the development of the characteristic dependent industries of the port, such as the refining chemical engineering, the vessel and matching industry, the modern weaving industry, etc.

Nantong has the advantage of having large resource and environment capacity. This advantage should be fully used in the construction of the newly fundamental chemical engineering base along the river, and in the development of the refining chemical engineering and the new medicine industries to promote the development of the derivative industries of the port and to form the chemical engineering industry chain. Besides, large scale of fundamental oil chemical factories can be developed on the bases of the deep water advantage near the port.

The vessel manufacturing industry is the dominant industry in Nantong. Its development needs the expansion of the scale, more investments and the development of the matching industries, to prolong the vessel industry chain and tries to be the very important vessel repairing base in the world.
The key point of the development of the weaving industry is the limitation of the scale and the lacking of the characters. Special characteristic productions should be constructed by the modernization of the weaving techniques to improve the overall level of the weaving industry.

4-3 Optimize the Industry Cluster and Promote the Overall Development of the Regional Industry

In the process of developing the refining chemical engineering industry, the vessel and the matching industry and the modern weaving industry, other industries should be developed meanwhile, such as the new material and the paper making industry, the grain and oil machining industry, the metallurgy industry, the electrical informational manufacturing industry, the touring industry and the modern agriculture industry, to promote the overall development of the industries near the river.

4-4 Develop Modern Logistic Industry

Logistics is the link of the port-neighboring industry and the regional city industry as well as the related industry of the port. The development of the modern logistics will do great good to the realization of the Nantong strategies of the riverbank exploiting and the river-ocean cooperation. It is urgent to setup the comprehensive logistic zone of Nantong port and cultivate a set of logistic centers. It is also important to accelerate the construction of the information managing system of the related industries and the comprehensive logistic information centre, to construct the logistic information platform, to make use of the export machining zone, to attract the complementary goods centers and the machining centers of the multinational corporations and to get involved into the global logistic value chain.

4-5 The Industry Layout Planning

The industry layout space of the port-neighboring area of Nantong city can be divided into one core and two wings. The core area is the riverbank areas on the two sides of the Sutong Bridge, including the city areas and riverbank areas in Tongzhou and Haimen. The eastern wing is the northern and the southern ends areas of the Chongqi Bridge and Huilong town. The western wing is the Rugao port and the Changjiang town.

Using the port advantages and the bridge effects, in the core area the industries that have large amount of throughputs and are highly water consuming such as the refining chemical engineering industry and the vessel repairing industry should be focused on to develop. The eastern wing locates near Shanghai city so that the sub city type industry serving Shanghai can be developed with the full use of the technique resources of Shanghai. The western wing connects the northern Jiangsu so that the attention should be paid on the local dominant industries such as the post-machining of the transferring goods and the refining chemical engineering industry. The post-extension areas along the river will be mainly used to develop the derivative industries of the port, such as electrical information and wrapping materials, etc.
5 The Policy Suggestions for the Development of the Port

Promoting the interactive development of the port and the city, prolong the industry chain, and strengthen the relationships between development of the port-neighboring industries and other industries are the rational paths for the development of Nantong and at the same time propose new requirements for the development of the port.

5-1 Harmonize the Managing System and Setup Competition-cooperation Relations

In a world full of competitions, the regional conflict of the competition really exists. For example, the large and the small Yangshan ports may bring about conflict to the development of the Beilun port of Ninbo; the construction of the Hangzhou Bay turnpike makes Shanghai much more attractive to Ninbo, Wenzhou, and Taizhou so that some economic hinterlands of Hangzhou are grabbed by Shanghai; the running of the magnetic suspension trains from the Pudong airport to Hangzhou will shortens the distance form Shanghai to Hangzhou and make Hangshou the outskirt of Shanghai. The successful experiences and trends of the development of the big cities home and abroad show that the key element is to actively promote the regional unified managing and considering interests of various sides to look for the solutions of the difficult regional problems. It is important to improve the regional comprehensive managing methods, to make good planning for the future, to fully integrate the regional resources, to look for the balance between competition-harmony-cooperation, to make logical layout and to invest and construct together.

Nantong should study more of Shanghai and actively accept its radiation. Shanghai is the biggest economic center of our country and the world famous international metropolis. It has lots of capitals, techniques, human resources and industries and very strong economic radiative ability. The rapid development of Suzhou, Wuxi and Changzhou in recent years is greatly attributed to the radiation of Shanghai. As the construction of Sutong Bridge and the cross-river tunnel from Chongming to Shanghai, the radiative special distance will be greatly shortened, and Nantong will really enter the core circle of the Shanghai economic zone. Thus form now on Nantong should study further of Shanghai, collect the macro and micro information of the industry structure reformation of Shanghai timely and accept radiation actively. Nantong should create conditions to make good preparations for accepting its industry shift, make good use of the functions of the distribution centers of Shanghai element markets, the core area of the industry optimization and upgrading, the infrastructures and the comprehensive service centers to try to form the work-dividing and cooperating system that can be connected with the Shanghai infrastructures and the industry matching. Nantong should make use of the opportunity of constructing Shanghai to be the international shipping center and accelerate the infrastructure construction of Yangshan port to strengthen the distributing transportation functions and to make the Nantong ports become the combination of the northern wing of Shanghai international shipping center.
5-1 Reform the Port Layout and Construct the Northern Wing Port Clusters of Shanghai

As the acceleration of the integration of the global economy, the hinterland export trading amount of Nantong ports will increase and the foreign trade throughputs will increase correspondingly. To the question that how the ports should adapt to the macro-scale and the specialization of the vessels and how to extend functions to develop multi-ways shipping and to form the comprehensive logistic center gradually, the key points lie in the expansion of the infrastructure construction, the reform of the port layout from the aspects of constructing deep water berths, making good distributing matching and technique upgrading of the old port areas.

In accordance to the development of the Shanghai international shipping center, studies should be done on the development forecasts on the position, the character, the functions, the vessel types and the throughputs of Nantong ports in front of the new situation. The pre-work of the development of the ocean-neighboring port exploitage should be emphasized. By the adaptation of the overall layout planning, the port layout can be revised in order to exert the main hinge port effect of Nantong ports in the Yangtze River drainage areas, in the Yangtze River delta, and even in the national comprehensive transportation networks.

5-2 Develop the Port Industries and the Reform the Industry Pattern Based on the Port Advantages

To emphasize on the development of the port-neighboring industry is the key point of the development of the port industry as well as the highlights of the industry structure reform of Nantong. The port industry planning should coincide with the overall development planning of the port and with the development of the city. The development attentions should be paid on the export directive type, the industries that have large amount of transportation and water consuming, and the port support industries such as the oil chemical, the electricity, the vessel, the metallurgy, the construction materials, the new type materials and the grain and foods industries to stimulate the reform of the industry structure of the whole city. Pay attention to the wind-generating electricity and the liquidized natural gas generating electricity, to the construction of the vessel matching industry and to the construction material projects such as paper-making, the steel, PVC, the titanium white powder, etc. and the new type material projects such as ABS and POM, etc. to make Nantong the biggest refining chemical engineering base, the important electricity base, the advanced vessel repairing base, the first-class new material base and the new petroleum chemical engineering base.

5-3 Expand the Functions, Develop the Port Service Industry and Reform the Third Industry Pattern

The port loading and unloading transportation directly stimulate the development of the port service industries, such as the cargo agency, the check service, the communication navigation, the vessel repairing, the salvaging, the restaurants and the entertainments. It also brings the prosperous of the industries such as the financial insurance, the posts and the telecommunications, the information inquiry...
and the holiday touring. It accelerates the development of the foreign trades, the foreign investments, the foreign economy and the service trades, especially the development of the port-neighboring business markets and the logistic centers. It will exert the radiative effects of the port to the two external and internal sectors and promote the development of the port business to make up for the business shortage of Nantong city. Besides, the development of the port service industry will increase the proportions of the service industry in GDP, which will change the industry structure and the employment structure of the city and supply with new employment opportunities for the redundant labors resulted from the industry structure reform and meanwhile give support and guarantee for the rapid development of the port.

6 References

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