

Research on the Innovation and Development of Nantong Marine Industry

Wang Fengqin

Nantong Institute of Technology, Nantong, Jiangsu, China

Keywords: Nantong marine industry; innovation; development

Abstract: Nantong enjoys the advantages of the river coastline and has the foundation for the rapid development of the ship equipment industry. Practical measures should be taken to develop the ship equipment industry in Nantong, that is, accelerating the establishment of modern shipbuilding mode and promoting the leapfrog development of the ship equipment industry in Nantong; Using information technology to improve the management level of Nantong ship equipment industry; Give full play to the role of colleges and universities and establish a trinity ship science and technology innovation system; Close cooperation between industry, University and research, and strive to build a number of industry, University and research cooperation bases; Implement the talent Cohesion Project. Provide intellectual support for industrial development.

1. Introduction

In recent years, with the rapid development of China's economy and the substantial improvement of industrialization level, the world shipbuilding industry has accelerated to Chinese mainland. Driven by the tide of market economy, Nantong has made great progress in the Shipbuilding Equipment Industry by virtue of its good location, geographical conditions and human resources. At present, the shipbuilding equipment industry has become the industry with the strongest development momentum in the city. The advantages of large enterprises in the industry are prominent, the matching enterprises are also well-known, the local shipyards are beginning to take shape, and the shipbuilding labor service is well-known at home and abroad

2. Current situation of Nantong Shipbuilding Equipment Industry

The rapid development of Nantong's Shipbuilding Equipment Industry in recent years has benefited from its unique location advantages. Nantong is located on the North Bank of renhaikou of the Yangtze River and in the T-shaped economic belt at the intersection of rivers and seas. It is close to the river and the sea. The waterway along the river is wide, the waves are small, the water depth is deep, the coastline is smooth and straight, and there is no slight erosion and siltation; The coastal waters are not silted up, which is a good site for building deep-water seaports. With mild climate and moderate rainfall, they are not directly attacked by typhoons, and they are safe all year round Without freezing, such geographical and natural conditions are very beneficial to the development of shipbuilding industry. Secondly, Nantong's shipbuilding equipment industry has a good foundation for shipbuilding, repair and supporting industry. The city's shipbuilding industry has obvious advantages in manufacturing, repair and machinery, electricity, instrument, marine materials, shipbuilding technology and labor export COSCO Shipping and COSCO steel structure, three large ship building and repair and ship supporting enterprises subordinate to COSCO Group, have the advantages of scale, technology and efficiency, and are the largest ship manufacturer in Nantong .The rapid development of industry has laid a good foundation, and the leading enterprises have increasingly played a leading role in industrial development. Third, the development strategy of "rejuvenating the city with Hong Kong" provides economic environment support for industrial development. The annual port economic Fair provides an unprecedented excellent platform for the integration of shoreline resources, It has created good environmental conditions for expanding and strengthening the shipbuilding industry.

The strong development of China's economy has provided new opportunities for Nantong's ship

equipment industry: first, the rapid expansion of domestic and foreign ship market demand has released huge development space for the development of Nantong's ship industry. Driven by the strong economic growth of developing countries such as China and India, the old single hull oil tankers and bulk carriers have entered the accelerated phase out period, Driven by the new demand after the financial crisis and the renewal of the world On the whole, the ship market will maintain a high development momentum. Secondly, the international shipbuilding industry will accelerate the transfer of capital and technology to the Yangtze River Delta and other riverside areas, which provides an important external driving force for the rise of Nantong shipbuilding industry, The shipbuilding industry has become one of the key areas favored by foreign investment. The foundation of Nantong shipbuilding industry has been formed and is ready to undertake large-scale industrial expansion. The conditions can meet the objective needs of the transfer of the world shipbuilding industry. Third, the national policy vigorously develops the shipbuilding industry. The national measures to speed up the development of China's shipbuilding industry and the shipbuilding industry is included in the four pillar industries of the development plan along the river in Jiangsu Province, which makes Nantong fully capable of being the leader of the economic rise of Central Jiangsu.

3. Difficulties faced by the development of China Shipping Equipment Industry

With the rapid development of Nantong Shipbuilding Equipment Industry, there are still many problems to be solved:

3.1 The fierce market competition poses a severe challenge to the development of Nantong Shipbuilding Equipment Industry.

At present, the two major domestic shipbuilding group companies and coastal provinces and cities have established the grand goal of the development of shipbuilding industry. Shandong, Zhejiang, Fujian and other provinces have also set their own development goals of shipbuilding industry. The competition situation of domestic shipbuilding industry is becoming increasingly severe. If we do not accelerate the pace of development, Nantong's shipbuilding industry will face a more severe competitive situation.

3.2 The development of ship supporting industry lags behind

Although Nantong's ship supporting industry has a certain foundation, compared with the international and domestic advanced level and the requirements of future ship industry development, the problems of low technical level and weak supporting capacity are still prominent. The localization supporting rate of Europe, Japan, South Korea and other shipbuilding powers is more than 90%, China is only about 45%, while Nantong is lower, The matching rate in the city is about 8% and that in foreign countries is 20%. Marine equipment with high added value and great technical difficulty, such as communication and guidance system, electronic equipment and low-speed diesel engine, mostly rely on imports. The shipbuilding industry is still large but not strong, and the contribution rate of Nantong Shipbuilding Equipment Industry to the national economy is relatively low.

3.3 The financing and guarantee problems of shipbuilding enterprises have not been fundamentally solved

The shipbuilding equipment industry is a typical capital intensive industry. Many shipbuilding enterprises in Nantong have basically developed by self accumulation, and many enterprises are still in the growth stage with relatively small scale. Therefore, the total amount of assets is generally small and the capital strength is not strong, The financing ability of most enterprises is low. If the financing and guarantee problems can not be well solved, it will affect the sustainable development of Nantong Shipbuilding Equipment Industry and weaken the competitiveness of Nantong shipbuilding enterprises

3.4 The level of scientific and technological innovation and management of shipbuilding enterprises is not high.

Ship design is the core link of shipbuilding technology. The technical level of enterprises is not high, and the innovation ability is not strong, which is largely subject to the design ability of shipbuilding enterprises. In recent years, although the shipbuilding ability of Nantong has increased, the ship type design is almost dependent on others, and some are imported from abroad, Including production process design and detailed design, most of them also rely on others .At the same time, the production efficiency of most small and medium-sized shipbuilding enterprises in our city is low, and the production management mode is far behind that of advanced shipbuilding countries.

4. Specific countermeasures for the sustainable development of Tong Shipbuilding Equipment Industry

4.1 Accelerate the establishment of modern shipbuilding mode and promote the great leap forward development of Nantong Shipbuilding Equipment Industry

At the beginning of the new century, the guiding opinions on accelerating the establishment of modern shipbuilding mode issued by the Commission of science, technology and industry for national defense pointed out the direction for the development of Nantong Shipbuilding Equipment Industry. Comprehensively establishing modern shipbuilding mode and greatly improving shipbuilding efficiency and efficiency are important ways for Nantong Shipbuilding Equipment industry to accelerate industrial transformation and upgrading, It is the central link for Nantong Shipbuilding Equipment Industry to realize "general assembly of construction, fine management and information integration" [61, the fundamental guarantee for enhancing the risk resistance ability of Nantong Shipbuilding Equipment Industry, and the only way out for Nantong Shipbuilding Equipment Industry to develop by leaps and bounds and sustainably.

4.2 Using informatization to improve the management level of Nantong ship equipment industry

Nantong shipbuilding equipment industry has developed rapidly, and the total shipbuilding volume has increased rapidly. The gap between basic shipbuilding facilities and Japanese and Korean shipyards has been small, but there is a big gap in shipbuilding efficiency and efficiency. The reason is that Nantong shipbuilding equipment industry often pays more attention to extension development and less attention to connotation development; pay attention to more hardware investment and less software improvement, and realize high output through high input. Nantong ship equipment industry must take the road of connotative development, Pay attention to the construction of shipbuilding management software, use informatization to completely change the mode of economic growth, realize lean shipbuilding and build an intensive shipbuilding enterprise. With the help of informatization, realize the "win-win integration" of information integration and realize quantitative, full load and accurate flow operation.



Figure 1 Nantong marine engineering equipment

4.3 Give full play to the role of colleges and universities and establish a trinity ship science and technology innovation system

A high-level Ship Scientific and technological innovation base is an important platform for Ship Scientific and technological innovation. In order to promote the scientific and technological progress and independent innovation ability of Nantong ship enterprises, our city should strive to build a platform composed of knowledge innovation, technological innovation And public service platforms as the main body of the ship science and technology innovation system: first, build a knowledge innovation R & D platform focusing on Undergraduate Colleges and universities with the main objectives of original ship scientific research and strategic high-tech research of ship industry; Second, colleges and universities at the junior college level should be given priority to, and a technological innovation platform should be built with the key technology of the industry as the main goal and the common technology and product development of the industry as the main goal; Third, all kinds of colleges and universities build public technology service platforms with their own discipline characteristics and aiming at the sharing of industry public technology services and scientific and technological resources.



Figure 2 Nantong marine supporting industry chain

4.4 Close cooperation between industry, University and research, and strive to build a number of industry, University and research cooperation bases

Strengthen the cooperation between colleges and universities, enterprises and scientific research institutions through cooperation, joint construction and integration, and build a cooperation mechanism of "division of labor, complementary advantages, benefit sharing and risk sharing" between colleges and universities and enterprises. Guide and support colleges and universities to establish long-term, stable and comprehensive scientific and technological cooperation relations with industries and enterprises, and form a strategic alliance of industry, University and research; Guide and support universities and enterprises to jointly build a number of key laboratories, engineering (Technology) centers, research and development centers, ship design centers and other R & D institutions, carry out product R & D, ship design and key technology research for cooperative enterprises, digest, absorb and innovate the products and technologies introduced by cooperative enterprises, and cultivate high-quality design and R & D teams for enterprises, Improve the independent innovation ability of enterprises; Support universities and domestic scientific research institutions to jointly build scientific research bases, jointly undertake marine science and technology projects, support universities and foreign universities and scientific research institutions to jointly build R & D institutions, and jointly organize technological research to improve their independent development and innovation ability.

5. Conclusion

Take advantage of the opportunity of multinational corporations to adjust the industrial layout, actively strive to introduce the R & D institutions of multinational corporations to settle in Nantong, and use the technology spillover of multinational corporations to drive the development of relevant

industries. Create an environment to attract talents and teams, and vigorously introduce high-level ship equipment professionals.

Acknowledgments

Project Name: Research on teaching Content Reform of Ship Building Technology course Project No. 202102488011

References

- [1] Wang Jianru Development status and Countermeasures of Qidong marine engineering ship industry [J] National business information and theoretical research, 2016 (27): 60-61
- [2] Qian Wei, Tao Yonghong Reflections on the demand for talents in the development of large shipbuilding industry [J] Chinese and foreign ship science and technology, 2017 (4): 1-6
- [3] Successful innovation and transformation of Nantong shipbuilding and marine industry [J] Ships and supporting facilities, 2016,0 (6): 131-132