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SWOT Analysis and Countermeasure of Jilin Province Aviation Logistics Industry Development Strategy Based on Low Carbon and Environmental Protection

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Abstract. Jilin Province is an important petrochemical, electronic research and development and agricultural product breeding base in China. After more than 30 years of reform and opening up, its economic construction has made great progress and has shown rapid development momentum. E-commerce and economic growth have driven the development of the logistics industry and promoted the growth and development of the aviation logistics industry. In the low-carbon and environmentally-friendly environment, the aviation logistics industry has been constrained by the macro-system, the impact of other logistics channels, the shortage of logistics talents, and the restrictions on carbon emissions, making the development of aviation logistics industry in Jilin Province difficult. Based on this background, the paper uses SWOT analysis method to systematically analyse the advantages and disadvantages of Jilin Airlines logistics industry and development opportunities and threats, and proposes solutions to how to develop aviation logistics under the current low-carbon environmental protection policy.

1. Development Status of Aviation Logistics Industry in Jilin Province

With the development of aviation logistics, the development of aviation logistics parks, which are the comprehensive facilities platform for the development of various entities of aviation logistics, is also in full swing. The aviation logistics park can attract base airlines. With the formation of aviation industry clusters, such as freight forwarding enterprises, third-party logistics enterprises, customs and financial institutions, it will help reduce logistics costs and improve the quality of logistics services. At the same time, it can also drive the development of related industries. Increase departmental income and increase employment. Jilin Province takes Longjia Airport in Changchun as an example. As an airport economic center, the supporting industries such as transportation, aviation service, and logistics and distribution will continue to gather in Changchun New District. The government-oriented aviation system planning combined with actual market demand will have a profound impact on the logistics industry in Jilin Province. From 2008 to 2018, during the ten-year period, the cargo and mail throughput of Longjia Airport also reached 8,5654.1t from 26,458t, and the number of take-off and landing took off from 21,756 to 73,371 in 2016. The business volume increased rapidly and the total demand was huge. Ten years after the completion of Changchun Longjia International Airport, the economy of Jilin Province developed rapidly. The GDP of Jilin Province grew rapidly from 398.148 billion yuan to 141.168 billion yuan in 2018. The per capita GDP was 15625. Yuan / person, increased to 51,086 yuan / person [1]. The foundation of rapid economic development has promoted the increase in the demand for freight in Jilin



Province. At the same time, the development of the airport and the logistics industry have promoted each other and improved the overall efficiency of the logistics industry in Jilin Province.

2. SWOT analysis of Jilin Airlines logistics industry based on low carbon environment

2.1. Advantage Analysis

2.1.1. Infrastructure Advantages. Since the reform and opening up, air cargo in Jilin Province has developed rapidly, and air cargo has gradually gained attention. Jilin Province's civil aviation cargo transportation routes have increased year by year, and cargo transportation capacity has been strengthened. The number of aircraft owned by Jilin Airlines has grown rapidly, the types of aircraft have gradually diversified, and the proportion of large-scale special cargo aircraft has become larger. These good transportation conditions are the hardware advantages of the development of aviation logistics industry in Jilin Province. The infrastructure of airlines and airport cargo warehouses has been continuously expanded and improved. The freight capacity of airlines has been reduced from the remaining tonnage of passenger aircraft cabins to the introduction of Combi-type passenger-cargo hybrid aircraft, and even to China International Airlines and China Eastern Airlines in recent years. The company uses the Boeing 747 and MD11 all-cargo aircraft to enter the international cargo route. China Cargo Airlines, Civil Aviation Express Co., Ltd. and China Post Airlines, which specialize in air cargo, air express and air mail transportation, build air cargo centers at Jilin International Airport.

2.1.2. Industry advantage. The regional industrial layout has become a scale, providing a good economic guarantee for the development of logistics. In terms of regional layout, Jilin Province has initially constructed a logistics channel for the purchase and sale of automobiles, petrochemicals, deep processing of agricultural and sideline products, and pharmaceuticals. There are more than 620 parts and components manufacturing enterprises in Changchun, and the parts manufacturing enterprises are distributed in circles. The number of enterprises has increased from the city center; the sales income of agricultural and sideline products processing industry has reached 223.8 billion yuan, and the provincial agricultural industrialization provincial key the number of leading enterprises has grown to 321 households. The number of agricultural products circulation processing enterprises in the province has reached more than 150, with an annual output of 4.3 million tons and annual sales of 14 billion yuan. The province's pharmaceutical manufacturing industry achieved an output value of 59.49 billion yuan, a year-on-year increase of 34.9%. At the same time, Jilin Province is cultivating 20 large and medium-sized enterprises such as Jilin Province Material Group and Jiliang Group, and has become a leading logistics enterprise in Jilin Province. These professional large and medium-sized logistics enterprises have played a good role in demonstrating the healthy and sustainable development of the logistics industry in Jilin Province.

2.2. Disadvantage analysis

2.2.1. Weak resource integration ability and low customer management. Due to the limitation of logistics management level, the level of resource integration of local aviation logistics enterprises in Jilin Province is not high overall. Although the aviation logistics enterprises have developed rapidly in domestic outlets, the phenomenon of individual administration among certain companies within the same company is serious. In addition, in recent years, the goods shipped by the airport, e-commerce (courier) goods accounted for more than half, the supply structure is single, and the proportion of express delivery in Jilin Province is unbalanced, the amount of receipts and delivery is much smaller than the delivery volume, the ratio of the two reached 1: 3, the low added value and the lack of local sources of supply have led to the current development of the aviation logistics industry in the airport economy zone is still at the initial level.

2.2.2. Transportation costs remain high. The biggest cost item of most aviation companies in China is fuel cost. Due to the monopoly system of aviation fuel supply and the lack of scientific aviation fuel consumption, China's aviation fuel is 60% higher than the international market, and aviation fuel costs account for airline transportation. 30%-40% of the cost. At the same time, first of all, with the current international energy conservation and emission reduction environment constraints, the cost of single-flight changes in China's civil aviation enterprises is at a relatively high level. It is not difficult to see that in the long term, in addition to China's civil aviation oil supply system, industry accounting standards and the country's tariff policy for the introduction of aircraft and aviation materials, etc., otherwise the current conditions, China's civil aviation industry the space for financial management is very limited [2].

2.3. Opportunity Analysis

2.3.1. The aviation logistics industry is in a period of rapid growth. In 2016, China's cargo and mail throughput was 14.094 million tons, an increase of 3.9% over the previous year. Among them, domestic routes completed 9.18 million tons, an increase of 3.7% over the previous year; international routes completed 4.914 million tons, an increase of 4.4% over the previous year. At the same time, according to the International Air Transport Association (IATA) report, by 2020, China will increase the freight volume by more than 1 million tons compared with 2015.

2.3.2. E-commerce market share and air express proportions continue to increase. As of 2017, Jilin Province's e-commerce sales achieved three-digit growth for three consecutive years. As the core link of e-commerce, the proportion of express logistics in aviation logistics has also increased year by year. According to statistics, in 2015, Changchun Longjia Airport's cargo composition, the most is the air express, which has accounted for the total amount of airport freight. More than 70% [3].



Figure 1. Air traffic in Jilin Province, 2012-2017

2.3.3. The continuous development of macro economy in Jilin Province. With the successive promotion of the "Thirteenth Five-Year Plan", supply-side reform, industrial structure optimization and other principles and policies, the development of Jilin Province has closely followed the development of the country. In 2015, the regional GDP reached 400.01 billion yuan, and the city's industrial structure was further optimized. The industrial and agricultural types that are suitable for air transportation in the main business income of the above-scale industrial and agricultural enterprises accounted for 30% of the total

share. At the same time, government functions at all levels have also formulated relevant support policies to promote the development of aviation logistics.

2.4. Threat Analysis

2.4.1. Threats to alternatives to other forms of logistics services. The competition between aviation and railways and highways is price competition. When the price ratio relationship between transportation modes is relatively reasonable, the effectiveness of various transportation tools can be fully and effectively utilized to promote common development. Once the freight rate is unreasonable, a large number of passengers will flock to a low-price mode of transportation. The second is speed competition. There is a market for speed, time savings and efficiency. In a certain sense, the determinant of competition between modes of transport is speed. On short-haul transportation, roads and highways have advantages: railways and highways are centered. The third is competition for service quality, including security, punctuality, and convenience for passengers and service delivery. From the overall situation of the industry, the overall development of the aviation logistics industry is still at a relatively low level, and the overall size of the industry is small, which is incompatible with the country's overall economic scale, population and land area.

2.4.2. Impact of foreign logistics companies. Foreign logistics companies have already targeted China's huge logistics market. They rely on strong capital strength, advanced management methods and rich management experience to enter China. At present, more than half of the world's top 10 multinational logistics companies have business coverage in Jilin Province. These international logistics giants have robbed customers from the local logistics companies with good service and reputation [4].

2.4.3. Logistics education backward. Jilin Province is still very backward in logistics education. Although the provincial higher education institutions have set up logistics and other related majors, the logistics majors of the above-mentioned schools have not become backbones or key specialties due to the influence of the history of running schools. Regardless of the construction of the teaching staff, the curriculum construction, and the practice teaching links, there are widespread problems that emphasize the theory and practice, which makes the graduates far from the ability and skills of the industry. The increasing demand for senior management personnel in logistics has made the logistics management personnel who meet the requirements, especially the logistics enterprise managers, logistics department managers, logistics planners and logistics information system developers seriously inadequate.

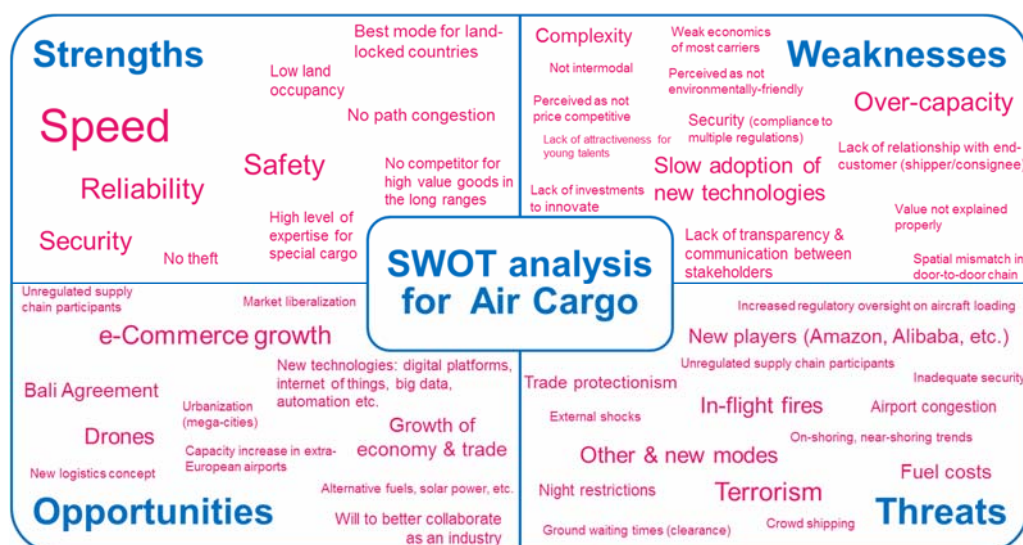


Figure 2. SWOT analysis of aviation logistics industry

3. Countermeasures for the development of aviation logistics industry in Jilin Province under low carbon environment

3.1. Develop countermeasures from policy and external environment

3.1.1. Strengthening legislation. The government should take the initiative to reduce the international trade protection of competitors by appealing to international shipping organizations through diplomatic channels. It can also protect the domestic shipping industry by means of the provisions of the international shipping industry agreement. For example, GATS stipulate that government procurement can give priority to domestic enterprises. This will give priority to the care of Chinese shipping companies in government cargo transportation. At the same time, China can also adopt appropriate policies such as formulating anti-protection rules, appropriate cargo priority, non-tariff barriers, government subsidies, and preferential policies to appropriately protect the domestic shipping industry. In particular, it should increase the level of indirect government subsidies to achieve the goal of improving the competitiveness of China's shipping industry.

3.1.2. Further play the functions and functions of industry associations. China's shipping enterprise associations should play an important role in learning the industry associations in developed countries. They are always thinking about the enterprises in the industry and striving for the maximum benefit for the healthy development of enterprises. Imitate the practice of foreign countries and organize many Chinese shipping companies to learn advanced foreign experience and methods.



Making air cargo easier, smarter and faster

Figure 3. The aviation logistics industry develops faster and smarter

3.1.3. Horizontal alliance to establish a freight alliance. From a global perspective, the competition in the aviation industry has extended from the competition between individual airlines to the competition between airline groups and groups, that is, competition between aviation alliances. In international air logistics, individual airlines cannot establish a global flight network due to the restrictions of navigation rights in various countries. This requires us to work closely with other aviation companies. Joining the freight alliance is a convenient and quick way to improve your strength and accelerate development. Through alliance cooperation, franchised airlines can expand the global air transport network, increase air traffic volume, reduce transportation costs, improve economic efficiency, complement each other's advantages, and participate in international transportation market competition without increasing investment or expanding the fleet. Freight Alliances can achieve synergies in procurement, product collaboration, sales and revenue management, and network planning to achieve higher levels of collaboration than passenger alliances [5].

3.2. Internal development strategy of airline logistics enterprises

3.2.1. Vigorously strengthen the construction of informatization and comprehensively improve the comprehensive technical level of air transport enterprises. New product dynamics, technology trends,

etc., are conducive to the development of new products; through the research on the demand environment, demand, preferences and demand trends of air cargo owners, we can better understand the actual needs of the market and customers; through the resources and processes of their own Research can optimize operational processes, rationally allocate resources, and reduce overall logistics costs. In the face of fierce market competition, it is imperative for Chinese aviation logistics companies to establish their own aviation logistics information systems and carry out market sensitivity construction.

3.2.2. Strengthening personnel training. Since human capital has a strong positive externality, in theory, the government's investment in human capital is necessary and necessary, which is conducive to improving the overall quality of the people and the potential for economic development. But this does not mean that the government needs to arrange all human capital investment. In cases where externalities are not obvious or institutional design can internalize external benefits, human capital investment must achieve a certain degree of socialization and diversification. When the same training program is implemented on objects with different personality traits and will qualities, the effects may vary greatly. Therefore, it is necessary to mobilize the enthusiasm of all parties, especially human capital investment objects, by introducing social investment in various aspects such as individuals and enterprises, so as to effectively improve investment efficiency.

4. Conclusion

Aviation logistics is an important link in the strategy of strengthening the civil aviation country. It is also the key core for Jilin Province to gather emerging industries, promote regional economic development, enhance the status of hubs, and promote employment levels. At present, the development of Jilin Province is still in its infancy. In order to accelerate the development of aviation logistics, it is necessary to further strengthen the investment and development of the airport industry; further strengthen regional cooperation and promote the docking with the gateway airport; further develop the advantages of the bonded area; further development Multimodal transport; further integrate logistics supply chain, improve modern logistics system; further accelerate the improvement of software and hardware facilities. Only by implementing a scientific and rational strategic plan, and striving to solve the negative impact brought by the threat while seizing the opportunity, can we ensure the rapid and healthy development of aviation logistics in Jilin Province.

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