

# Aviation Logistics Development Research

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**Abstract—China's trade policy and China logistics policy changes, the rapid development of aviation logistics in china. Aviation logistics developing in a high speed, China's domestic aviation logistics enterprise has brought new market development opportunity while, also brought from the market environment changing, customer demand level, competition increases the challenge. In the face of the new market opportunities and challenges, studies Chinese aviation logistics development history, present situation and developing trend of the aviation logistics enterprises, especially Chinese aviation logistics enterprise's future development. Chinese aviation logistics with the trade and economic globalization and the rapid development of China's economy gradually grow up, but affected by various objective factors, Chinese aviation logistics to sail voyage is not smooth sailing, is facing a huge challenge, but also there are many opportunities for development, it is a bittersweet. How to turn challenges into opportunities, who has reversed Chinese aviation logistics industry situation as changeable as clouds and rain hand, is worthy of our deep analysis and discussion. This article based on business model design of aviation logistics development status and problem analysis.**

*Keywords- Aviation logistics; present situation; business model*

## I. INTRODUCTION

China aviation logistics can be described as an emerging miracle in traditional logistics industry, adding an indelible mark for the development of China's logistics. Especially with China's accession to the WTO, the global economic integration is deepening; China's logistics industry is unwilling to fall behind the others, achieving meteoric rise in the extremely fierce competition of logistics industry, with linear upward development trend. But behind this seemingly strong momentum, there are much joy and misery. With the development of global supply chain and international competitiveness strengthening, as an important part of modern logistics, aviation logistics plays an increasingly important role in the economic development. On the one hand, the development of global supply chains requires rapid flow of raw materials and commodities on a global scale in order to reduce inventory costs, and improve economic efficiency. On the other hand, with the pace of life accelerating, there is growing demand on timeliness of trade and services. The aviation logistics is its fast, safe, long-distance distribution characteristics are welcomed by modern economic development. While in the constitute of

entire community freight transport and international trade mode of transport view, aviation cargo proportion is still small, but because of aviation cargo objects have small volume, high-tech, high value-added features, the carried value of aviation logistics is quite high.

## II. DEFINITION OF AVIATION LOGISTICS INDUSTRY

Aviation logistics refers to the whole process taking aviation transport as main transport form, with the help of modern information technology to connect the main supply and demand subject, to make sure effective flow of the information about the raw materials, finished products from the beginning to the end. Aviation logistics industry is all-in-one high-end logistics service industry of information, communications, electronics, aerospace, manufacturing, service, etc. It is a composite industry established by aviation freight forwarding, air lines, aviation cargo terminals and other logistics companies cooperating closely for aviation cargo transportation, which is also known as the "luxury in logistics services". The development of aviation logistics industry highlights the development trend of China's economy directly.

## III. PRESENT DEVELOPMENT SITUATION OF CHINA'S AVIATION LOGISTICS

After China's reform and opening-up policy, especially accession to the WTO, China's economy grows sustainably and rapidly, domestic and international trade is frequent, import and export trade develops with leaps and bounds. Driven by many factors including the support of national policy guidance, the industries and products structure constantly optimized and industrial demand further diversification, China's aviation logistics industry has entered a period of rapid development, in more than a decade, the domestic aviation cargo business volume has average annual growth of more than 20%, three times higher than the growth rate of world aviation cargo, aviation logistics has become a new growth point of China's air transport development.

## IV. COUNTERMEASURES AND SUGGESTIONS OF ACCELERATING CHINA'S GENERAL AVIATION DEVELOPMENT

### A. Strengthen supervision force

Construct marketing-type aviation logistics enterprises. For the disadvantage of China aviation logistics having weak sense of corporate marketing, China's domestic aviation logistics enterprises must change from the

“Operation” logistics enterprise to “marketing” logistics enterprise as soon as possible. The primary task of transformation is service concept change of China's domestic aviation logistics enterprise.

*B. Accelerate aviation logistics resources integration and recombination and improve aviation logistics network.*

As a network industry, aviation transport maintaining proper scale is an inevitable requirement of transport economies of scope and density of economy. At present, China's airfreight business has wide problem of small scale, which is difficult to form an effective network and difficult to build effective economies of scope and density of economy. Therefore, making the existing resources fully integrated and restricted from the perspective of scale, which needs to be integrate from the perspective of corporate mergers and acquisitions, to achieve air teams expansion and complementary fleet route network and play the range of strengths and network advantage of air transport as much as possible.

*C. Strengthen strategy alliance to form complementary advantages*

Strategic alliance is an important means of modern logistics network rapid expansion. In increasingly competitive today, the traditional aviation cargo companies relying on their own resources to expand service network is clearly not enough, looking for ways to achieve win-win partnership, establishing alliances and extending their service chain is the only way. At the same time, use the integration of airports, airlines and aviation cargo agents and other resources to make relevant aviation logistics enterprises establish strategic partnership, to ensure quick and efficient flows of aviation cargo to achieve win-win goal.

*D. Strengthen information construction, and establish uniform aviation logistics information platform*

Logistics information platform is an important means to achieve modern aviation logistics industry. A full-featured aviation logistics information platform should integrate aviation logistics companies, shippers, ports, banks, customs, industry and commerce tax, and other information systems, realizing exchange of information and transmission and management among various subsystems through logistics information platform, to meet the demand of for aviation logistics information of different customers, aviation logistics enterprises and government departments, solve the current isolated problem between domestic aviation cargo carriers and other aviation logistics service providers, improve the efficiency of logistics systems, and promote aviation logistics industry rapid development.

V. AVIATION LOGISTICS DEVELOPMENT RESEARCH BASED ON BUSINESS MODEL DESIGN

*A. Related introduction of business mode*

Business model can be defined as the overall solution to maximize customer value, integrating all the internal and external elements that make enterprises run to form a complete and high efficient operation system with a unique

core competitiveness, and meet customers' demand and achieve customers' value through optimal implementation forms, while allowing the system to achieve the goal of sustained profitability. A business model is generally composed of nine elements; different business models can be distinguished by comparing the difference between these nine elements (Table 3.1).

TABLE I. 9 ELEMENTS OF BUSINESS MODEL

Business model elements	Brief introduction
Value proposition	The value can be provided to customers by the company through their products and services.
Objective customers group	The customers aimed by the company. The group has general characteristics so as to make the company create value (focus on these values). The process to define customer group is also called market division.
Distribution channels	Various channels contacting with customers by the company. The paper introduces how to develop market. It revolves market and distribution strategy of the company.
Customer relationship	The relationship with customer group established by the company, the usually called customer relationship is concerning with it.
Value configuration	The configuration of resources and activities.
Core abilities	The needed ability and qualification to perform its business mode by the company.
Partners network	The partnership network between the company and other companies to provide value effectively and realize its commercialization. It also describes the company's commercial alliance scope.
Costs structure	Money description for the used tools and methods.
Incoming model	The means used to by the company to create wealth through various income flows.

*B. Business model design research based on industry level*

*1) Business model components analysis based on industry level*

Although people have conducted deep analysis for business model components, the analysis was just based on enterprise level. If analyzing business model design from aviation logistics industry level, we need to definite the business model components firstly.

Technical innovation, aviation logistics industry has an outstanding feature, namely technical innovation, making innovative technology change into products, thus constructing an important part of creating value.

Market innovation, fro aviation logistics industry, in the components of a business model, market discovering and innovation is the important basis for determining

market segments, value proposition and completing value realization.

Value network, the features of developing an industry bigger and stronger is to form industrial cluster, while it is the value network that cannot be formed in the same industry around value chain. In the aviation logistics industry components, value network is an important platform to realize value collaborative creation and value transition.

Profit model, to judge whether an industry can realize sustained development, we need to analyze whether this industry can establish unique profit model that hard to simulate, that is, the industry can realize sustained profit. For aviation industry, its profit models include designing revenue source and improving costs structure. Thereof, revenue source is the means of aviation logistics industry to obtain revenue.

## 2) Prototype design of aviation logistics industry business model

The components analysis of business model based on industry level is the basis of conducting aviation logistics industry business model. In business model prototype design, we need to take business model essence-value creation and realization core logic as axis to define the mutual relationship between each component.

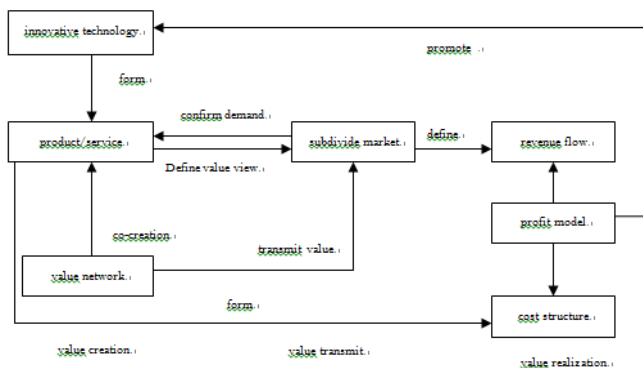


Figure 1. Business model dynamics innovation path logic frame

Demand analysis and implementation suggestions of aviation logistics business model procedure optimization

Aviation logistics process not only involves the consignee, consignor, airlines, overseas agents, customs, commodity inspection, airport cargo terminals and other organizations, but also includes aviation logistics departments and personnel within the enterprise: the pre-sale, sales and after sale staff, delivery personnel, handling personnel, airline booking and documents preparation personnel, customs clearance personnel, financial reconciliation and settlement personnel and so on. How to ensure the internal staff in these aviation logistics enterprises contact with the consignee, consignor, airlines, overseas agents, customs, commodity inspection, airport cargo terminal smoothly, and how to ensure reasonable allocation of internal staff positions and high efficient responsibilities distribution are the problems to be solved by business process reengineer. Business model design considers and examines aviation logistics business organization settings, responsibilities assignment, staffing and other aspects of operations management abilities, which is critical to enterprise development. Whether it can

meet the aviation shippers' increasing aviation logistics demand of "low cost, minimum time, cargo security, and smooth information" is the only criterion to measure the success of business process reengineering. The design must be based on the owners' cost, time, safety and smooth information needs.

### a) Based on cost control demand of the shipper

Business model design should be based on the cost control demand of the shipper. Aviation shippers' demand is just the ultimate pursuit of aviation logistics enterprises. If the aviation logistics enterprises want to reduce their costs, they should be based on the shippers' prospective to grasp the logistics cost structure of the owners. The cost structure includes the total costs of enterprise procurement, sales, production and other related activities with enterprise logistics. To reduce logistics costs is an operating target of the owner enterprises.

Including the following transportation costs:

Transportation costs: refers to all the costs caused by raw materials production and finished products transport activities, including direct transportation costs and management fees;

Inventory holding costs: general inventories can account for more than 20% of manufacturers assets; inventory holding costs include inventory financing costs, inventory service costs, inventory costs and price adjustment risk losses;

Warehousing costs include: warehouse rental, warehouse depreciation, depreciation of equipment, handling costs, freight and packaging material costs and management fees;

Order processing and information costs: order processing starts from the customer placing order until the goods received, all document processing activities in the process; costs associated with order processing activities are order processing costs;

IT costs refers to the IT costs associated with the logistics management operation, including software depreciation, system maintenance and management costs.

Procurement costs: it refers to the related logistics costs concerning the procurement of raw materials, including the cost of purchase orders, management fees of procurement plans personnel, procurement personnel management costs etc.

### b) Based on the time control demand of the shippers

Business model design should be based on the owners' demand of time control. With the increasing market competition, technological progress and innovation as well as rapid changes of aviation shippers' demand, coupled with the critical demand for air cargo logistics time, so the competition between aviation logistics enterprises is always the logistics costs competition. While under the current rapid development of economic globalization, the air shippers groups that are sensitive with time are increasing, and the entire response time requirements of air cargo logistics is also increasing. Time-saving often represents value growth of air cargo.

### c) Based on shippers' demand of cargo safety

Aviation logistics profit should be based on the owner's requirements on cost and time control, while pay attention to the shippers' requirements on cargo safety. Too meet the security requirements for aviation cargo, there is only one way, that is, making production standard,

normal logistics processes and operate strictly in accordance with the process, strengthening the safety management of goods in transit process. At the same time with enhancing staff safety training, the specific practices are as follows:

Transportation security administration: use reputable airlines and trucking companies; for higher value items, using container or closed box-type vehicles to ensure safe transport.

Warehouse safety management; strengthen security warehouse management; the warehouse should be verified by national security management departments, increasing electronic monitoring facilities and fire alarm facilities.

Handling security management: using special handling equipment for loading and unloading, to ensure the goods in good condition. For defective packaging, we suggest the owners to replace the packaging or replace with reinforced packaging.

File security manage: for important documents, they should be managed by specially-assigned persons; for the particular importance files, they should be copied as backup file, and make the file transfer record.

Insurance: by purchasing cargo insurance, warehousing insurance, vehicle insurance and personnel insurance to ensure minimize the owner's loss in the event of damage and loss of the goods.

*d) Based on the shipper's demand on smooth information*

Aviation logistics is an overall system, the formation and development of a comprehensive aviation logistics industry chain must be based on comprehensive analysis of traditional logistics processes, and on the premise that continue to meet the needs of aviation shippers, identify the existing problems of original aviation logistics processes, and then optimize and integrate all the logistics resources and manpower of aviation logistics enterprise, making sales, transportation, operating, finance and other processes achieve the best configuration, conducting full analysis of the coordination and cooperation of different parts and aspects systematically, and continuously reduce intermediate links, to improve the overall response capability, to get systematic logistics business model design. Institutionalized management thinking should be established within the enterprise from the top to the down. The operation based on the business model is an important means of self-improvement of aviation logistics enterprises. With the market and demands changes of aviation shippers, aviation logistics enterprises must bring the business model improvement into institutionalized management mode and effectively control that the aviation logistics processes improvements must meet the standardization and

integration requirements of business operation and management, once the process is determined to be improved systematically, the operation should be controlled strictly and continuously improved.

## VI. CONCLUSION

Aviation logistics occurrence is accompanied by goods production and movement, and developed along with the improvement of market economy and development. After years of development, international logistics industry gradually forms a integrated urban and rural circulation network relying on central city with market adjustment as the major operating mechanism, and the infrastructure of transportation, information and communication, storage, packaging and distribution, and other industries continues to strengthen; market logistics network is gradually expanded.

However, with the economic and social development, the traditional aviation logistics services simply taking transport as the main function is unable to meet the needs of customers. To develop China's aviation logistics, it is necessary to develop the integration of aviation logistics. Chain-management services provided by modern logistics focus on the combination of various aspects, emphasizing reasonable and effective operation of various transport means, as well as time saving and timely flexible transportation, distribution in order to maximize providing the green versatility and integrated services to customers.

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