Research on Resource Integration Method of Aviation Logistics Enterprises Based on Service Supply Chain

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Abstract: Logistics service supply chain is a synergistic modern logistics service operation mode, which conforms to the development requirements of logistics industry synergy, meets the increasing demand of modern integrated logistics service, integrates the supply and demand of logistics and logistics enterprises, and integrates the upstream and downstream integrated operation of supply chain. Based on the analysis of the actual basis and theoretical basis of the integration of aviation logistics service supply chain, this paper proposes the integration model of aviation logistics service supply chain, and discusses the basic strategy of aviation logistics service supply chain integration to maximize the value of enterprise, turning to the maximization of the value creation of the aviation logistics service supply chain based on the integration effect, and fundamentally enhancing its competitiveness in the aviation logistics market. By cultivating core competencies and developing learning organizations to create an attractiveness for service supply chain integration, we can jointly promote the integration and management of aviation logistics service supply chain.

1. Introduction

With the globalization of economic activities, service outsourcing has gradually become a new normal. Following the product supply chain, research related to service supply chain has gradually become another hot spot for experts, scholars and large enterprises and institutions [1]. With the continuous improvement of living standards, customers put forward higher requirements for cost, efficiency and flexible service. Some logistics enterprises gradually realize that the knowledge level and service consciousness of customers are constantly improving, the service level of enterprises is limited, and the service requirements of customers are becoming more and more professional and personalized. The service ability of a single enterprise can no longer meet their service requirements [2]. Logistics is essentially a practical activity of human society, which is ubiquitous in the process of social activities such as the production, exchange, distribution and consumption of material data [3]. The role of logistics in economic and social development is like the arteries and veins in the human body, which plays a basic role of circulation and circulation, and is an indispensable part of supporting economic operations [4]. The aviation logistics service supply chain refers to the purpose of meeting the needs of customers in the aviation logistics service. Starting from the organization of the supply, through the operation of the ground transportation service, the airport cargo station service and the air transportation service, the service supply chain formed by the final delivery of the goods to the customer, through this service supply chain, realizes the flow of goods and goods. The transfer of custody responsibility and the exchange of information between them [5].

The supply capacity constraint of logistics service providers is an important factor affecting the rapid response of logistics service integrators to customer supply chain logistics requirements [6]. In 2016, researchers studied the service outsourcing and disaster response methods in the relief supply chain [7]. In order to avoid the lack of ability of the customer enterprise logistics service during this period, the logistics service integrator will implement a multi-stage capability procurement strategy to the logistics service provider in combination with the change of the customer enterprise's demand information. In order to reduce the loss of service capacity, the loss caused by insufficient or excess

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[8]. At present, in the process of aviation logistics service operation, the supply chain of aviation logistics service seems to be an integral whole, but it lacks systematicness and comprehensiveness, or simply links the resources of node enterprises and technical methods. The overall control ability and market integration ability are poor, which seriously affects the operation of aviation logistics and the market competitiveness is weak. This paper is based on the theory of system science, drawing on the basic ideas of synergetics, integration theory, population ecology, game theory and so on. It also extensively draws on modern supply chain management theory, technology and methods, and deeply analyses the synergy mechanism in order to explore the ideas and Strategies of synergistic operation management. A case study on the selection of product service providers in the new air logistics service supply chain is conducted, and the rationality of the evaluation index system and the feasibility of the evaluation method are empirically tested [9].

2. Methodology

Node enterprises that constitute the air logistics service supply chain include air freight forwarders, ground transportation and distribution enterprises, Airport terminals, airlines, customs and commodity inspection, and customers. If an enterprise wants to cooperate with other enterprises, it must have its own unique core competitiveness, that is, it has the resources and capabilities needed by other enterprises, otherwise it will be excluded from the cooperative camp [10]. Before air cargo enters the departure airport, almost all operations are performed by air freight forwarders, including centralization of scattered cargo sources, document processing, organization of ground transportation and temporary storage, etc. The airport cargo terminal is mainly engaged in loading and unloading, security inspection, aircraft take-off and landing work. Airlines provide air transportation services, and more are transporting goods from port to port. Especially in the peak season of logistics industry, the logistics demand of various enterprises is strong, and the service ability of logistics service providers is easy to produce tight supply. In this case, if effective measures cannot be taken to solve this problem, it will directly affect the cooperation between logistics service integrators and customer companies.

The two indicators in the indicator system are evaluated in the form of expert scoring. The specific scores are as follows: The specified score range is 1-3 points, 1 is very poor, 3 is very good, the experts score each indicator according to the actual situation, and get the expert evaluation matrix. The details are shown in Table 1 and Figure 1 below.

Table 1 Evaluation level

Evaluation level	Score	The average score
Very bad	1	2.3
Very good	3	1.5

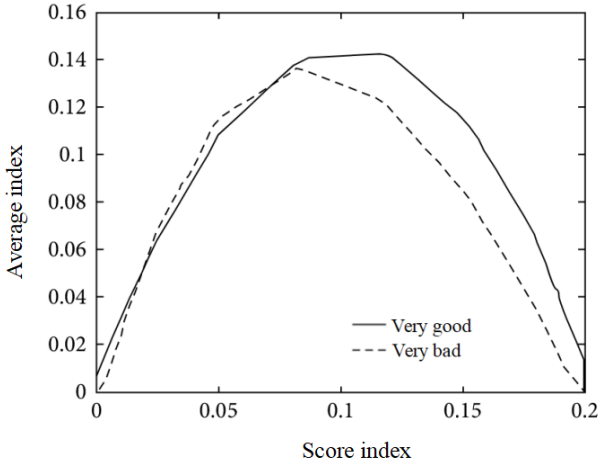

Figure 1 Evaluation level

In the course of operation, the air freight forwarder uses its advantage of mastering the information of multiple airlines to provide customers with so-called differentiated services for their own interests; the airport cargo station utilizes the specificity of its assets, illegal loading and unloading, neglect management, Delays in service response, etc. occur from time to time. However, it does not have the core resources of air transportation; airlines have aircraft to guarantee aviation flight, but rarely have direct contact with shippers and no customer resources. For companies, the most critical decision is to find a living space that is beneficial to them. To seize the opportunity, this space and opportunity should be complementary to other enterprises, which requires strengthening the stronger business links, abandoning the weaker non-core business links, cultivating the core competence of enterprises, and laying the foundation for the development of coordination and integration between enterprises. The research and application of logistics service supply chain has attracted the attention of relevant scholars and researchers at this stage. Logistics service supply chain takes the integration of logistics service resources as a means to provide high-level logistics services for enterprises and customers in the chain.

This paper introduces the concept of service supply chain from the perspective of e-commerce, and holds that in e-commerce, on the one hand, the supply chain should focus on the needs of users, on the other hand, the needs of users should not only be some form of products, but also broader services. When a customer makes a service request to a service provider, if the service provider has the ability to provide the service to the customer, it immediately responds to the customer's service request, otherwise the customer's service request needs to be decomposed and a request is made to other service providers. Table 2 below summarizes the research perspectives and main points of the service supply chain.

Table 2 Three research perspectives and main points of service supply chain

Research Perspective	Main points	Research characteristics
Service link	Integration of related service activities	Product Supply Chain as the Carrier
Service trade	Applying Supply Chain Management in Manufacturing Industry to Service Industry	From the perspective of the industry-wide commonness of service industry.
Service consciousness	Service-oriented Integrated Supply Chain	The broad concept of service holds that a product is a part of a service.

At the micro level, every enterprise in the supply chain is regarded as an agent. Through the "local rules" of each individual's behavior, it forms a bottom-up macro-form or order, which is an integral attribute, although part of it does not have, and is called "emergence". Supply chain resilience is generated by the self-organizing behavior of each member, as shown in Figure 2.

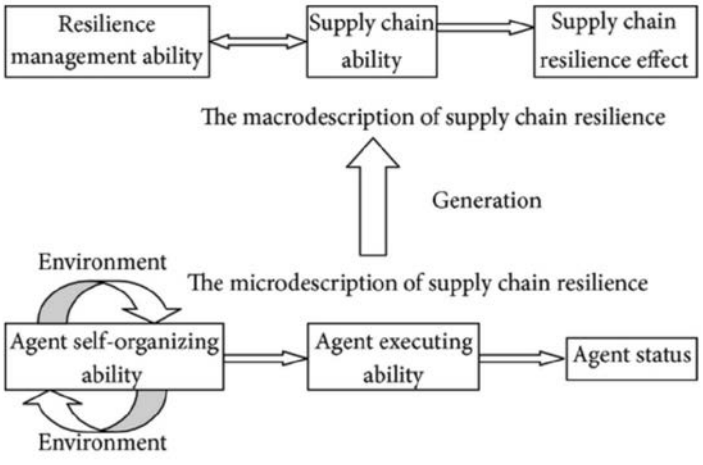

Figure 2 Micro and macro description of supply chain elasticity

Resource integration firstly mines related resources scattered among different entities and

organizations to form a resource pool. Then, classification, evaluation and screening are carried out. Finally, the resources obtained through mining and selection are docked to realize the complementary integration of resources among enterprises. Forced by market competition, air freight forwarders either sacrifice their own interests to maintain a stable customer relationship, or lose some customers. When the market situation is not good, the freight rate is lowered, the organization of the source of goods becomes difficult, the scale efficiency is reduced, and the operation cost of freight forwarders is increased. Therefore, logistics service integrators must improve the accuracy of demand forecasting in purchasing decision-making. Many scholars who study tangible perishable products have put forward two-stage or multi-stage procurement strategy to solve this problem, that is, in the procurement process, the initial procurement quantity is adjusted according to the acquired demand information continuously, in order to achieve the optimal procurement cost or benefit.

3. Result Analysis and Discussion

In the whole process of air logistics, air freight forwarding enterprise is the only link that directly contacts the cargo owner. Aviation freight forwarder is the information exchange center of aviation logistics service chain. It comprehensively grasps the information of cargo source and route network. The information from customers is analyzed and processed by air freight forwarder to form the corresponding demand information, which is then sent to airlines. After confirmation by airlines, the information is fed back to the air freight forwarder, which is then handled by air freight forwarder to the air freight station and customers. In the air logistics service supply chain, different node enterprises have their own advantages. In the whole process of air logistics, air freight forwarding enterprise is the only link that directly contacts the cargo owner. Aviation freight forwarder is the information exchange center of aviation logistics service chain. It comprehensively grasps the information of cargo source and route network. Information from customers is analyzed and processed by air freight forwarder to form the corresponding demand information, which is then sent to airlines. After confirmation by airlines, the information is fed back to the air freight forwarder, which is then handled by air freight forwarder to The air freight station and customers. In the air logistics service supply chain, different node enterprises have their own advantages.

The model was also analyzed using numerical experiments. According to the decision-making principle of the chain-chain cooperative operation mode, the principle of the supply side's profit is the largest. Therefore, the idea of the numerical experiment is to find out the maximum profit of the supplier, and study the change of each parameter for the value and profit according to the change of relevant parameters. Impact. Table 3 below is the experimental statistics.

Table 3 Experimental statistics

Customer profit	Supply chain profit	Logistics profit
50.14	10.78	70.33
39.31	28.36	56.94

Current supply chain research has evolved from "single supply chain" to "cross-network research based on multiple supply chains", focusing on "supply chain network" centered on core business and its multi-distributors and multi-customers. Cluster supply chain is an organizational network that participates in different processes and creates value for the final consumers in the form of products and services. As shown in Figure 3, it maps how firms in one layer relate to each other, and how firms in other layers relate to each other.

The endogenous factors of the supply chain system are caused by various reasons, including machine failure, poor materials, poor process control, work accidents and rework, as shown in Figure 4.

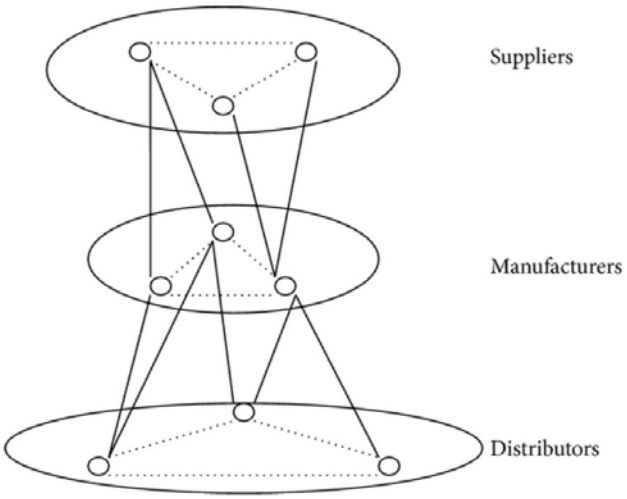

Figure 3 Cluster supply chain network structure

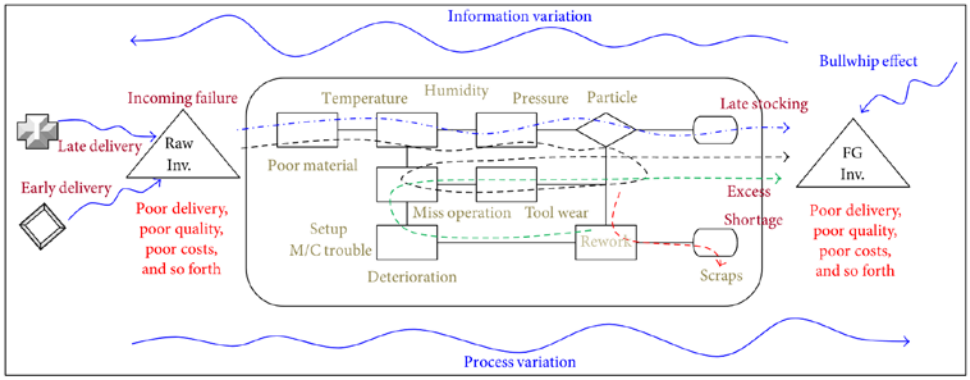

Figure 4 Key factors restricting supply chain management

Under the background of continuous integration of logistics enterprises and manufacturing enterprises, the study of new logistics service supply chain should try to explore the transformation path from logistics service innovation to product service innovation and the implementation mode of product service system extending from manufacturing industry to the final client. This is in line with the trend of continuous integration of enterprises and urgent adjustment and revitalization of China's logistics industry. Logistics service faces a wide range of customers, and different logistics service demanders have different demands for logistics services. From the nature of customers, logistics service customers include individual consumers and organizational consumers. Organizational consumers include organizations of all types, such as business enterprises, non-profit organizations, and government organizations. The key business processes of the aviation logistics service supply chain include the organization design of the aviation logistics service supply chain, customer relationship management, cargo station service management, inventory management, ground transportation and air transportation management, partnership management and information flow management.

The air freight forwarding has the knowledge and experience of professional operation and good organization and coordination ability. It is more familiar with every small part of the flow of goods than other enterprises. It has formed close cooperative relations with the airports, airlines, customs, and the three inspection departments all the year round. Effectively deal with various difficult problems and emergencies that occur in the convergence, smoothly implement ground services and air transportation, and respond to customer needs in a timely manner. Among these knowledge resources, there are not only explicit knowledge described by normative words and codes, but also tacit knowledge contained in various enterprises. It includes all kinds of perception and intuition of logistics problems and judgment and exploration of problems. Tacit knowledge often involves the

cultivation of core competence of member enterprises. To decompose and reduce the pressure and risk of individual investment. Loose linkages usually represent contractual linkages, such as the formation of cooperative relationships between enterprises through contract agreements in terms of business, resources, etc., forming strategic alliances, or forming virtual enterprises, etc.

4. Conclusions

Under the background of the continuous integration of logistics enterprises and manufacturing enterprises, the research of new aviation logistics service supply chain should try to explore the transformation path from logistics service innovation to product service innovation and the implementation mode of product service system extending from manufacturing industry to the final client. This is in line with the trend of continuous integration of enterprises and urgent adjustment and revitalization of China's logistics industry. Logistics service integrators rely on advanced information technology and management level. Under the background of the continuous integration of logistics enterprises and manufacturing enterprises, the research of new aviation logistics service supply chain should try to explore the transformation path from logistics service innovation to product service innovation and the implementation mode of product service system extending from manufacturing industry to the final client. This is in line with the trend of continuous integration of enterprises and urgent adjustment and revitalization of China's logistics industry. Logistics service integrators rely on advanced information technology and management level.

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