

# *Research on value chain cost management of civil aviation industry in China*

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**Keywords:** Civil aviation transport industry; Value chain cost management; System building

**Abstract:** The traditional value chain of civil aviation transportation industry lacks flexibility and uniqueness. For aviation enterprises, cost management is an important guarantee for their enhanced competitiveness and sustainable development. Perfect cost management provides effective decision-making basis for the operation of enterprises. There is great significance for aviation enterprises optimizing cost management. Combining with logistics, capital flow and information flow, the value chain of civil aviation transport industry overcomes some deficiencies, which provides new ideas for cost management, value creation and core competitiveness of civil aviation transport industry. This paper first analyzes the current situation of civil aviation transport industry. And then it introduces the content of value chain cost management, including entity value chain and virtual value chain. Finally, this paper constructs a value chain cost management system suitable for civil aviation transportation industry.

## 1. Introduction

In 1995, Jeffrey F. Rayport and John J. Sviokla first proposed the theory of virtual value chain based on traditional value chain. Scholars at home and abroad have made in-depth studies on information value creation, the role and general model of virtual value chain, and so on. With the continuous progress of modern information technology, great changes have taken place in all walks of life, especially in the service industry. Combining value chain cost management, it is necessary to analyze the civil aviation transportation industry. The civil aviation administration issued the statistical bulletin on the civil aviation industry development in 2017, which is shown in table 1.

Table 1: The development status of China's civil aviation transportation industry in 2017

Industry market	indicators	Values	Growth rate
Civil aviation industry	Total transport turnover	108.308 billion tons · km	12.6%
	Passenger turnover	951.304 billion people · km	13.5%
	Cargo and mail turnover	24.355 billion tons · km	9.8%
Passenger market	Passenger traffic	551.56 million · people	13.0%
Freight market	Freight volume	7.059 million tons	5.6%
	Passenger throughput	1.148 billion	12.9%
Airport business	Cargo throughput	16.1773 million tons	7.1%
	Take-off and landing flights	10.249 million flights	10.9%

## 2. Value chain cost management

### 2.1 The Value chain cost management content

Value chain cost management can be divided into two categories: internal value chain cost management and external value chain cost management. Enterprises should reasonably maintain the interrelationship between the internal and external value chains, so that enterprises and their stakeholders can achieve a win-win situation. The Value chain cost management content is shown as the figure 1.

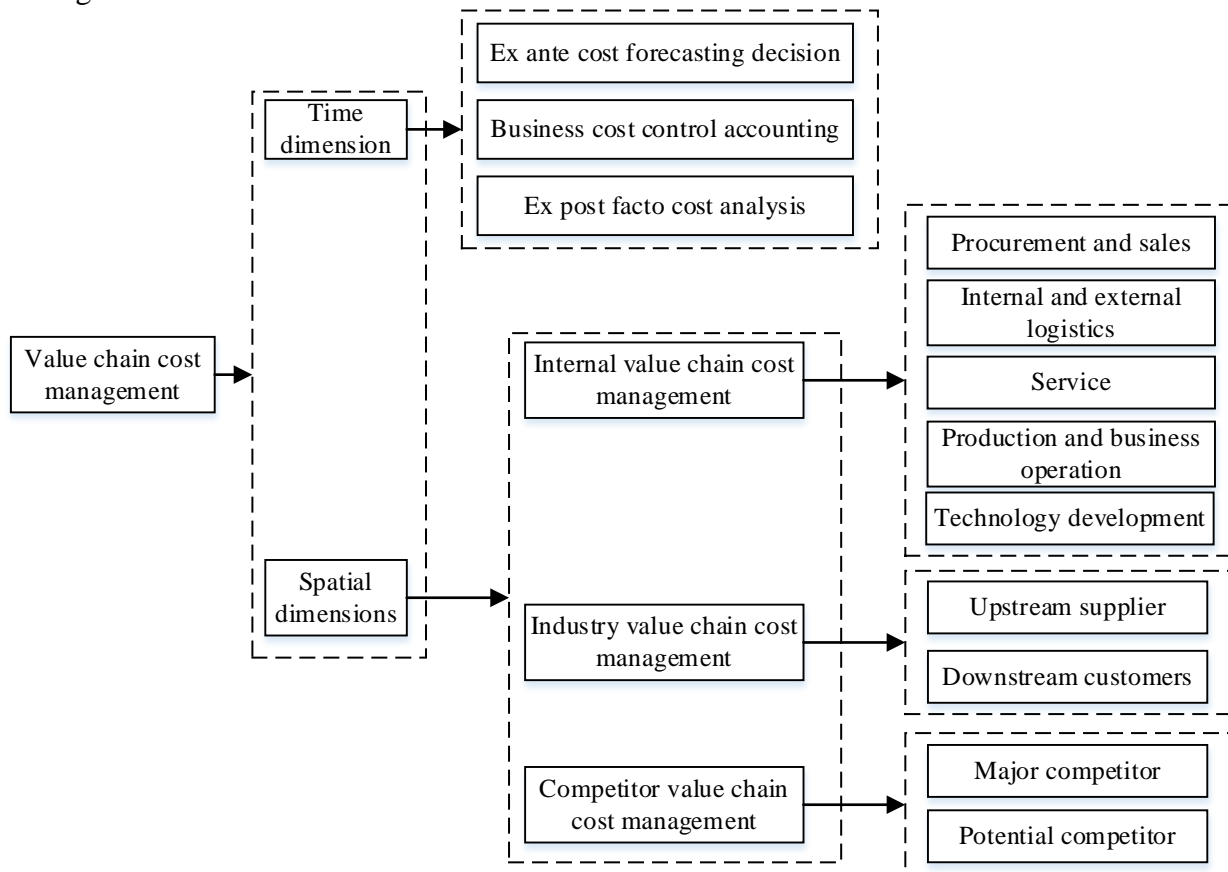


Figure 1: Value chain cost management content

### 2.2 Civil aviation transport value chain

The entity value chain takes airlines and other civil aviation transportation enterprises as the core. The virtual value chain is rooted in the entity value chain. In the virtual value chain, civil aviation transport enterprises use information to realize cost management and value increment. The formation of any link in the virtual value chain includes information collection, organization, selection, selection and distribution. The entity value chains is shown in figure 2. The virtual value chain is shown in figure 3.

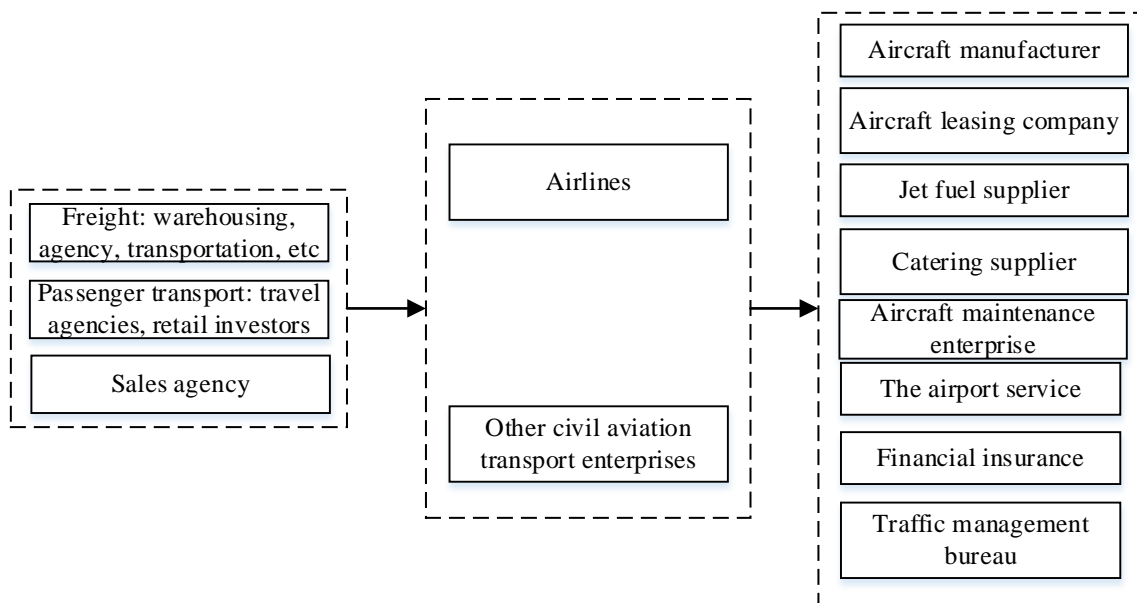


Figure 2: The entity value chains

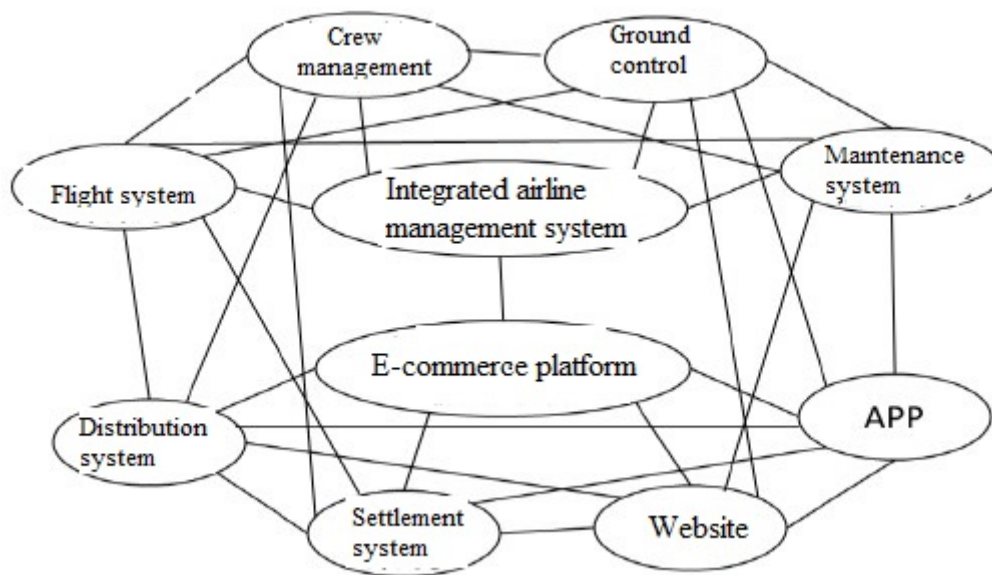


Figure 3: The virtual value chain

### 3. Construction of flight cost management system based on value chain

#### 3.1 The construction of flight cost management system flow chart

Flight production cost management system occupies an important position, such as production data, sales data, financial data, etc. Through the integration of airline performance evaluation information, sales information and management information, comprehensive operation analysis and decision-making behavior can be carried out. The flight cost management system flow chart is shown in the figure 4.

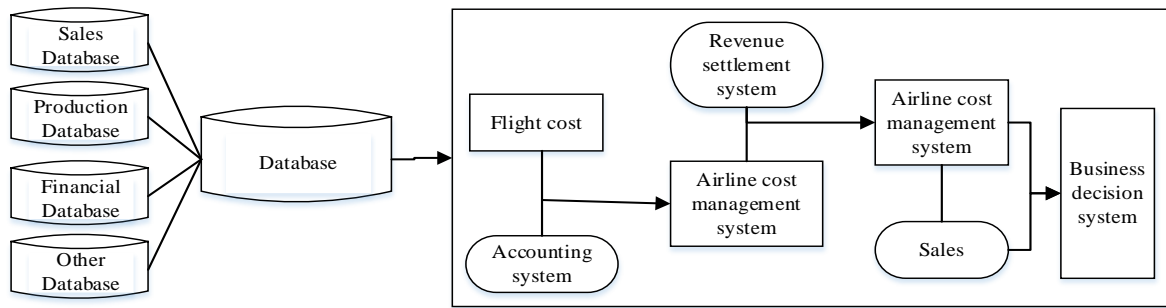


Figure 4: The flight cost management system flow chart

### 3.2 Identification and identification of value chains

In order to accurately reduce costs, this paper effectively identified and identified the value chain generated by the relevant value activities. By constructing flight production cost management system, enterprise managers can better control and manage. The total categories of aviation production costs are shown in table 2.

Table 2: The total categories of aviation production costs

NO.	Items	NO.	Items
1	Airport landing service fees	10	Disposal charge
2	Aviation fuel consumption cost	11	Bank freight reimbursement
3	Meals and provisions for passengers	12	Flight training expenses
4	Tourist souvenir charges	13	Aircrew recuperation cost
5	Charges for in-flight magazines	14	Maintenance materials cost
6	The flight is not at normal cost	15	Aviation materials cost
7	Crew accommodation	16	High turnover cost
8	Departure system charges	17	Non-routine service charges
9	Cost of cabin service	18	Other fees

### 4. Conclusions

Based on the traditional value chain, the virtual value chain can give full play to the technological, information and interactive advantages, which can provide new ideas for the promotion on the cost management, value creation, and the core competitiveness. Civil aviation transport enterprises should coordinate the traditional value chain with the virtual value chain which combines the capital flow, logistics and information flow. The industrial chain of civil aviation transportation industry should cooperate with each other to better face opportunities and challenges.

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