

# *Research on Strategic Cost Management of Changan Automobile under the Perspective of Value Chain*

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**Abstract:** The global automotive industry is accelerating its transformation towards new energy and intelligence, and market competition is becoming increasingly fierce, with the automotive industry facing the dual challenges of cost pressure and efficiency optimization. In this context, strategic cost management has become an important means to enhance competitiveness, and value chain analysis provides an effective path for enterprises to optimize costs. Based on the value chain perspective, this paper focuses on Changan Automobile's strategic cost management, analyzes the current situation of the enterprise's cost management in purchasing, research and development, production, marketing, etc., and discusses its advantages and shortcomings in cost control in the light of the competitive environment and supply chain situation. This paper puts forward improvement suggestions by optimizing supply chain management, improving R&D investment efficiency, deepening lean production, strengthening digital transformation and other measures, with a view to helping Changan Automobile build a more efficient strategic cost management system so as to enhance its market competitiveness and achieve sustainable development.

## **1. Introduction**

### **1.1. Background of the study**

As the global automotive industry continues to change and upgrade, traditional automakers are facing unprecedented opportunities and challenges, the new energy automotive industry is rapidly emerging, and the global automotive industry is rapidly transforming towards electrification, intelligence and digitalization.<sup>[1]</sup> Because consumer demand for automobiles in terms of safety, intelligence and environmental performance is gradually increasing, the share of traditional fuel vehicles in the market is gradually declining, new energy vehicles have emerged as a key direction for the development of the industry, in China due to the automobile market is becoming increasingly saturated and the consumption pattern continues to optimize the domestic automotive industry is facing increasing competitive pressure. <sup>[2]</sup> Changan Automobile needs to continuously optimize its production efficiency and cost composition in order to enhance the competitiveness of its products in the market. In order to effectively respond to these challenges, the company needs to

conduct comprehensive thinking and layout in its strategy.

1.2. Changan Automobile Value Chain Identification

1.2.1. Internal value chains

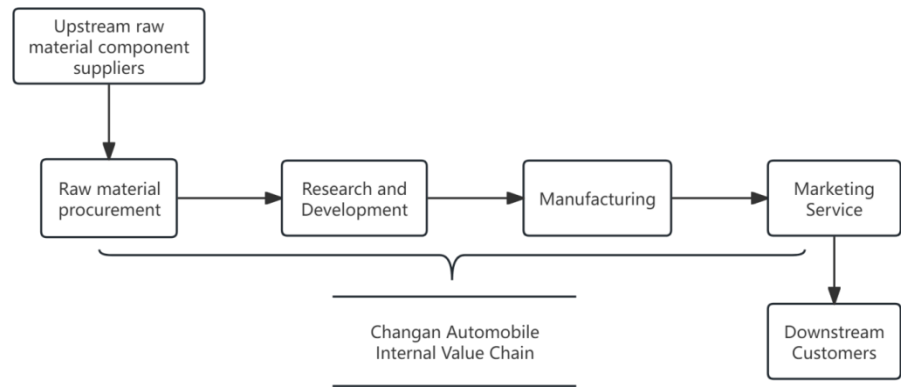


Figure 1: Changan Automobile Internal Value Chain

Changan Automobile's internal value chain integrates the whole chain of activities from raw material procurement to marketing and customer service, reflecting the characteristics of vehicle manufacturing enterprises to control the whole process. According to Figure 1, it can be seen that in the Research and Development and design stage, Changan Automobile focuses on technological innovation, relying on the support of scientific and technological and management organizations, and continuously increases its investment in new energy vehicles and intelligent driving technology, which has led to the realization of the products' renewal and replacement.

1.2.2. External value chains

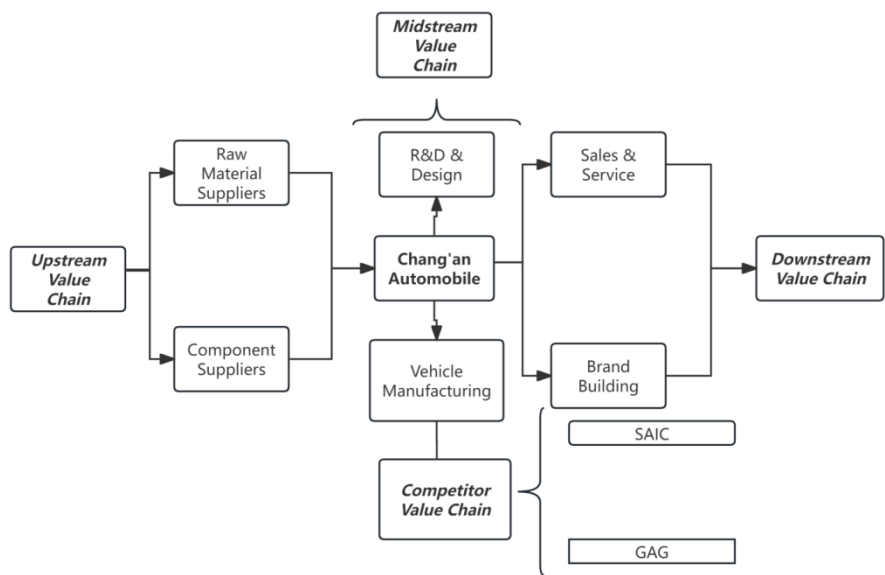


Figure 2: External value chain of Changan Automobile

Figure 2 clearly shows that Changan Automobile's external value chain is mainly composed of the industry value chain and the competitor value chain, thus presenting a complete picture of the

complexity of the interaction between the enterprise and its external environment and the multidimensional network of value creation.

In the upstream supply chain at the industry value chain level, Changan Automobile attaches importance to establishing long-term strategic partnerships with suppliers to strengthen supply chain collaboration and optimization, so as to ensure the high quality and cost-effectiveness of raw materials.

In terms of the value chain of its competitors, Changan Automobile is experiencing intense competition from domestic counterparts, such as SAIC and GAC, as well as challenges posed by international brands, such as Toyota and Volkswagen, and is feeling the pressure of competition in the areas of research and development investment, new energy vehicle technology and marketing strategy.

In terms of branding and customer interaction, Changan Automobile is learning from the creative marketing approaches of leading international brands, and wants to create a youthful and technologically advanced corporate image to respond to the changing needs of the market.

## **2. Analysis of the current status of strategic cost management based on the value chain**

### **2.1. Internal value chains**

#### **2.1.1. Procurement**

Changan Automobile's procurement costs include direct expenses, management costs and storage costs. In the manufacturing industry, procurement costs account for a large portion of the cost, and most of the components involved in Changan Automobile's vehicle design need to be purchased from external sources, so it is very critical to strengthen the cost control of the procurement process<sup>[3]</sup>. Changan Automobile has a set of effective strategic cost management strategies in procurement, building a large-scale centralized procurement system, aggregating decentralized parts procurement needs, and relying on a large order volume to bargain with suppliers, so as to reduce procurement costs.

#### **2.1.2. Research and Development**

Changan Automobile focuses on platform-based R&D strategy to build a universal automotive platform, which significantly reduces the number of parts and components, also reduces development costs, promotes efficient co-production of various models in the same line, effectively realizes the intensive use of R&D resources, and the launch of a Changan Automobile engine can be applied to a variety of models, which effectively reduces the enterprise's R&D and production costs. In addition, Changan Automobile strengthens global collaborative R&D, aggregates high-quality resources around the world, and allows projects to continue to advance with the help of time difference, effectively reducing time costs and shortening the R&D cycle.

#### **2.1.3. Production process**

In the face of the pressure on production capacity brought about by sales growth, Changan Automobile has adopted the production strategy of “cost reduction and efficiency improvement”, and has also built intelligent manufacturing bases. Changan Automobile has increased the construction of production facilities, which has significantly improved its response speed and production capacity in response to the fast-growing market demand, and has been able to flexibly respond to changes in the market, contributing to the continuous growth of sales. This has enabled Changan Automobile to respond flexibly to market changes and contributed to the continuous

growth of its sales performance.

#### 2.1.4. Marketing segment

The strategic cost management strategy adopted by Changan Automobile in marketing has its own unique features. Changan Automobile attaches great importance to the development of online marketing channels, using social media, official websites and other online platforms to release product information and preferential activities, which can accurately reach the target customer groups, thus significantly reducing offline publicity costs. Changan Automobile utilizes a co-branding strategy, cooperating with related industry brands and technology companies to promote smart cars, sharing marketing resources and expenses.

### 2.2. External value chains

#### 2.2.1. Upstream supplier level

Table 1: Changan Automobile's share of purchases from suppliers

Particular year	2019	2020	2021	2022	2023
Ratio of purchases from the largest supplier to total purchases	2.40%	5.15%	5.46%	6.15%	6.40%
Ratio of purchases from top five suppliers to total purchases	8.85%	14.55%	15.18%	17.85%	18.60%

\*Source: CSMAR

Changan Automobile will carefully select suppliers in the raw material procurement process, and evaluate each other's technology, production, quality control, and delivery time to ensure the quality of parts at the source. According to the data in Table 1 it can be seen that during the period from 2019 to 2023, Changan Automobile's supplier concentration shows a year-on-year trend of increase, and in 2019, the procurement value of Changan Automobile's first largest supplier accounted for only 2.40%, whereas in 2023, this ratio rapidly increased to 6.40%, which realized a nearly three-fold increase in the intervening years. The percentage of purchases from Changan Automobile's top five suppliers also grows from 8.85% in 2019 to 18.60% in 2023, reflecting Changan Automobile's increasing reliance on its major suppliers, and also indicating a change in the structure of Changan Automobile's supply chain, where an increased degree of centralization may mean that Changan Automobile adopts a more centralized supply chain management strategy.

#### 2.2.2. Downstream customer level

Table 2: Contribution of major customers to Changan Automobile's revenue

Particular year	2019	2020	2021	2022	2023
Ratio of sales revenue from the first largest customer to total revenue	1.83%	2.07%	2.88%	3.21%	1.99%
Ratio of sales revenue from top five customers to total revenue	7.53%	12.28%	12.66%	14.20%	15.21%

\*Source: CSMAR

Changan Automobile has optimized its sales channel strategy, focusing on establishing partnerships with competitive dealers to reduce channel management costs<sup>[4]</sup>. By looking at Table 2 it can be found that the sales revenue share of Changan Automobile's top five customers in recent years has shown an upward trend, growing from 7.53% in 2019 to 15.21% in 2023, such a change

in the indicator shows that Changan Automobile has achieved some results in expanding its important customer groups, in the case of Changan Automobile, there is a change in its sales revenue share of its number one customer, but the overall at a low level, not exceeding the 4% threshold despite a peak in FY2022, which means that the company's revenue is not significantly dependent on a single major customer.

### 2.2.3. Competitor level

Table 3: Comparison of Changan Automobile with Major Competitors

Comparison dimension	Changan Automobile	Shanghai Automobile Group(SAIC)	Guangzhou Automobile Group (GAC)
Market Positioning	Mainly focusing on medium and high-end independent brands, while developing joint venture brands, focusing on intelligent and new energy development.	Owns its own brands and a number of joint-venture brands, with extensive market coverage and emphasis on globalization strategy	Focusing on the mid-to-high-end market, with equal emphasis on independent and joint-venture brands, and gradually moving towards the high-end and new-energy markets
Business Field	Passenger cars, commercial vehicles, new energy vehicles, intelligent networked vehicles, covering vehicle manufacturing and core components	Passenger Cars, Commercial Vehicles, Auto Finance, Mobility Services, New Energy and Intelligent Driving	Passenger cars, new energy vehicles, intelligent networked vehicles, business covering parts and components, finance, mobility, etc.
Sales Model	Combine online and offline, strengthen direct + dealer network, focus on developing digital marketing	Relying on the country's extensive dealer system, while the layout of the direct sales model to strengthen online channels	Adopting a distributor model, developing both direct and online sales, and exploring C-suite direct sales
Core Competitiveness	Strong independent research and development capabilities, specializing in intelligent driving and new energy, and launching brands such as “Deepal”.	Strong industry chain integration ability, many joint venture brands, leading globalization layout	Outstanding Research and Development strength, rich experience in joint ventures and cooperation, rapid development of high-end brand “HYPTEC”

From Table 3 the comparison between Changan Automobile and its main competitors, it is clear that Changan Automobile, SAIC and Guangzhou Automobile Group have their own characteristics in terms of market positioning, business field, sales model and core competitiveness. Changan Automobile focuses on the mid-to-high-end market, focuses on intelligent and new energy development, relies on a sales model that combines online and offline, and takes independent Research and Development and technological innovation as its core competitiveness. SAIC has a large market coverage and an early globalization layout, with its business covering vehicle

manufacturing, finance, travel and other fields, and it has established diversified sales channels by relying on its strong joint venture brands and industry chain integration capabilities. GAC Group, on the other hand, focuses on the mid- to high-end market, promotes the development of high-end independent brands, adopts the parallel mode of dealership and direct operation, and relies on technological innovation and the cooperation experience of joint venture automobile enterprises to rapidly promote the development of its new energy brand. Each of these three automakers has its own focus in the competition, with Changan highlighting technological innovation and advancement, SAIC relying on scale and globalization, and GAC boosting its competitiveness with joint venture experience and high-end branding.

### **3. Analysis of the shortcomings of Changan Automobile's strategic cost management from the perspective of value chain**

**Lack of stability in cost management in the procurement process:**Changan Automobile's procurement costs have fluctuated significantly, and this instability may result from changes in market prices, dynamic adjustments in supply chain management strategies and changes in production plans. Changan Automobile's significant fluctuations in procurement costs reflect instability in its supplier management and long-term cost planning, and the annual increase in Changan Automobile's supplier concentration also poses a potential risk that the production process could be significantly impacted if a major supplier encounters problems. This risk could have a significant impact on Changan Automobile's production process.

**R&D cost-effectiveness not fully realized:**The cost-effectiveness of R&D has not been brought into full play: Changan Automobile has been continuously increasing its investment in R&D, however, its R&D investment is relatively limited, which may constrain its technological innovation and enhancement of its core competitiveness, and the optimization of the costs and benefits of the enterprise's R&D process still needs to be deepened.

**Leanness in the production chain needs to be improved:**Changan Automobile has strengthened quality control in the production process, but there are still problems with the defective rate and after-sales service costs, which have posed certain challenges to cost-effectiveness<sup>[5]</sup>.In order to optimize overall performance, there is an urgent need to deepen the extensive use of lean manufacturing concepts within the enterprise, with a focus on cutting resource losses and removing non-value-added processes at the component manufacturing and assembly stages as a means of promoting production efficiency.

**Inefficient cost management in the marketing chain:** Changan Automobile, in the comprehensive use of online resources and offline channels, there is a lack of resource allocation or unbalanced allocation of resources, and does not fully implement the marketing strategy for the differences in the local market, this unbalanced allocation of resources has an impact on the effective control of the enterprise's marketing costs.

**Poor external value chain synergies:** The clustering of suppliers of Changan Automobile in the external supply chain system intensifies the dependence on individual suppliers and reduces the resilience of the supply chain, and the high concentration of customers' revenue sources poses a potential operational risk. The data illustrates that the top five customers of Changan Automobile contribute 15.21% of the sales revenue in 2023, which shows that the company's revenue is overly dependent on a single market, and that the corporate profitability may be affected by the minority of key customers' Demand changes and show obvious vulnerability..



#### 4. Optimization Suggestions for Strategic Cost Management of Changan Automobile under the Perspective of Value Chain

Enhanced cost management stability in procurement: Changan Automobile can build a comprehensive supply chain risk management system, evaluate suppliers' financial stability, production efficiency, delivery reliability, and market reputation, implement a diversified supplier strategy to mitigate the risk of possible supply concentration, and establish a backup supplier program for key components, which is necessary to enhance the resilience of its supply chain<sup>[6]</sup>.

Improving the efficiency of inputs in the R&D chain: Changan Automobile should seek external technical collaboration in key areas such as battery technology and lightweight materials for new energy vehicles to reduce R&D time and costs. Changan Automobile should strengthen its R&D project management, establish a strict project evaluation and progress management mechanism, dynamically monitor the costs, benefits and risks of each R&D project, improve the market conversion rate of R&D results, and establish a quick response mechanism from R&D to production to speed up the launch of its products to seize market opportunities<sup>[7]</sup>.

Deepening Lean Management in Production: Changan Automobile should optimize the production process and equipment configuration, use intelligent means to make the production process more refined, for the needs of different models, Changan Automobile can optimize the configuration of the production line, improve the efficiency of the use of equipment and production flexibility, strengthen the quality management in the production process and the degree of automation, and effectively reduce the generation of defective products and reduce labor costs.

Optimizing cost management in the marketing chain: Changan Automobile can strengthen its digital marketing strategy by leveraging big data and artificial intelligence to accurately locate target segments and implement customized marketing programs, which will enhance the efficiency of online and offline channel synergies, promote the optimization of the customer shopping process under the O2O model, and at the same time, reduce channel operating costs. Changan Automobile can also share marketing expenditures by cooperating with industry leaders, realizing a multi-win marketing goal.

Enhancement of external value chain co-management: Changan Automobile should make efforts in upstream and downstream relationship management as well as industry synergy and innovation to make up for the lack of synergy in the external value chain. Changan Automobile can establish a long-term and stable cooperation mechanism, sign long-term strategic cooperation agreements with upstream suppliers, share production plans and market forecast information, and realize the optimal allocation of supply chain resources<sup>[8]</sup>. Changan Automobile can also obtain more cost-effective supply chain resources through joint bidding and signing long-term procurement contracts to enhance the responsiveness and flexibility of the supply chain.

Exploring the combined path of value chain optimization and digital transformation: Changan Automobile will make good use of the new possibilities brought about by digital technology to establish an end-to-end digital management system, build a digital management platform covering the entire process of purchasing, production, sales and service, and achieve the interconnection of information in all parts of the value chain to improve overall efficiency. The company will also accelerate the application and promotion of digital technology, and integrate it into the whole chain of Research and Development, production, and customer service. With automated report generation and cost analysis tools, the company will be able to instantly monitor cost changes<sup>[9]</sup>, this provides precise scientific guidance to the decision-making process of the organization.

#### 5. Conclusion

This paper carries out an in-depth study of Changan Automobile's strategic cost management

based on the value chain. With the accelerated transformation of the automobile industry to new energy and intelligent direction, the demand for efficient cost management is more and more urgent, and the strategic cost management mode can provide a more scientific cost optimization path for enterprises. Therefore, it is of great significance for Changan Automobile to construct a strategic cost management system based on the value chain.

Starting from the current strategic cost management problems of Changan Automobile, this paper comprehensively analyzes the key links and core value activities in the internal and external value chains of the enterprise using the value chain perspective. The results of the study show that Changan Automobile has certain advantages in supply chain integration, intelligent manufacturing, and brand marketing, but there is still room for improvement in supply chain dependence, Research and Development investment efficiency, and production lean management. Through these analyses, the company is able to have a clearer understanding of its strengths and weaknesses in strategic cost management and seek optimization strategies accordingly to enhance its core competitiveness and achieve sustainable development.

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## References

- [1] Liu Haiying, Wen Xin, Liu Meixue. *Research on strategic cost management of new energy automobile enterprises based on value chain*[J]. *Accountant*,2022,(07):59-61.
- [2] Liu Yang. *Exploration of cost management of automobile enterprises based on the perspective of value chain*[J]. *China Strategic Emerging Industries*, 2022,(30):176-178.
- [3] .Han Peide. *Research on strategic cost management based on value chain analysis*[D]. *Lanzhou University of Finance and Economics*, 2021.
- [4] Zhao Yunfeng, Wang Changrong. *Financial Statement Analysis Based on Corporate Strategy Perspective--Taking Changan Automobile as an Example*[J]. *Accountant*,2023,(23):19-21.
- [5] Hu Guangli. *Cost strategy gains and losses of automobile enterprises drawing on*[J]. *Finance and accounting study*,2018,(22):101.
- [6] Cao Hongyang. *Exploration of strategic cost management and application in automobile manufacturing industry*[J]. *Finance and Economics*,2020,(04):110-112.
- [7] Zhang Jing, Chen Shufang, Gong Xiaojun. *Research on Cost Management of M Automobile Manufacturing Enterprises Based on Value Chain Perspective*[J]. *Research on Finance and Accounting*,2020,(03):46-51.
- [8] Yang Navy. *Discussion on product cost management of automotive electronics enterprises in the context of chip drought*[J]. *Taxation*,2021,15(19):183-184.
- [9] Liu Yajuan, Wang Xiaohua. *Research on the financial situation of new energy automobile industry under resource allocation strategy*[J]. *Commercial Observation*,2024,10(24):29-31+49.