

Research on the development strategy of Carmax

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1. Executive summary

In the context of the pandemic, this paper constructs SWOT analysis model, PEST analysis model, Boston matrix analysis model, and conducts a case study of Carmax. Based on the analysis of the advantages and disadvantages of carmax's internal environment, as well as the opportunities and challenges faced by the external environment, this paper constructs a drive path with informatization as the core, and puts forward corresponding development strategies and safeguard measures.

2. Introduction

2.1 Theme and Background

2.1.1 Introduction of Carmax

CarMax was founded in 1993. Its original parent company is Circuit City Stores, the largest electronic retailer in the United States, which sells microwave ovens, televisions and other household appliances. In 1993, the profit of the electrical distribution channel gradually decreased. Austin Ligon, the senior manager of Circuit City Stores, and Richard L. Sharp, the then CEO, took advantage of their accumulated experience in retail business to put forward the concept of "super store" for used cars for the first time, and opened the first CarMax store in Virginia. In 2002, CarMax business separated from Circuit City and became an independent company. As of February 29, 2021, CarMax had 220 used car stores in the United States, becoming the largest used car retailer and used car financing provider in the United States.

2.1.2 American second-hand car enterprises in the context of pandemic

In recent years, driven by favorable policies, consumption upgrading and market demand from all countries in the world, the global second-hand car industry has witnessed rapid development, including the United States. At present, the United States is still the largest used car market in the world. In the past 10 years, the average annual sales of new cars in the United States was 16 million, while the annual sales of used cars reached more than 40 million, basically 2-3 times that of new cars. However, under the influence of the COVID-19, this has brought both opportunities and challenges to used car enterprises. On the one hand, during the COVID-19, the government issued a home order, stipulating that most Americans should stay at home and be isolated. This epidemic, which made the US economy nearly stagnant, also hit the US used car industry hard; On the other hand, affected by the epidemic situation, American consumers have a stronger demand for cars than ever before, but the sharp gap with the high demand is the shortage of inventory. Due to the tight supply of car chips, new cars cannot meet the market demand, and a large number of consumers enter the second-hand car market, which also brings great opportunities for the development of second-hand car enterprises(CADA,2022).

2.2 Issues within thematic areas

In the context of the epidemic, carmax needs to clarify its position in the second-hand car market, recognize its competitive environment and the risks and opportunities it may face, so that when making decisions in the future, it can try to choose the most favorable way forward. At the same time, the company's decision-making needs to be constantly adjusted according to the changes in the macro environment. How to modify the company's decision is also an important issue carmax needs to consider.

3. Key findings of strategic analysis and critical assessment of strategic choices

3.1 Theoretical Basis Research

The core of strategy is to understand the differences between itself and other enterprises (Porter,1996,p.66). Whether from a macro or micro perspective, when studying strategic management, it is to discuss "how enterprises can gain stronger competitiveness(Porter,1985,p.68)". Productive enterprises strengthen their competitiveness by producing high-quality products, while service-oriented enterprises enhance their competitiveness mainly by meeting customer needs and improving customer satisfaction(Roy et al.2016,p.836). In the past 20 years, through the constant research of scholars, more connotation has been gradually given to the competitive strategy. Not only from the perspective of market environment and the development of competitors, dynamic competitive strategy has been proposed(Miller et al.2015,p.766), but also many elements such as politics, culture, etc. have been gradually added to the strategy, so that strategic research can play a greater role in practice(Ivano,2018,p.136); In addition, at the micro level, the research on heterogeneous resources of enterprises has been improved(Wibbens,2019,p.188), from traditional tangible resources to intangible capabilities in the transition stage(Giudici et al.2018,p.1377), to current knowledge learning and innovation(Choudhury et al.2019,p.211). Chandler et al. pointed out in their research that in the business process, enterprises should formulate corresponding strategies according to the external environment, and gradually optimize the organizational structure based on strategies (Chandler,1962).

3.2 Boston Matrix Analysis of Carmax

Carmax's main businesses include retail, auction and wholesale, EPP (expansion and protection plan), and service income:

Used car retail and auction wholesale: the company's main business pillar, the proportion of revenue continues to increase. In 2020, the retail revenue will reach 15.71 billion dollars, and the auction wholesale revenue will reach 2.67 billion dollars, accounting for 97% of the total revenue. Carmax's retail and auction businesses adopt the self operated mode. It buys cars from consumers, wholesale auctions, motorcades and other channels, and then sells them after repair. The retail business is mainly

aimed at cars with younger age, shorter mileage and better vehicle condition (usually 10 years, less than 100000 miles). Other cars that do not meet retail standards are auctioned and wholesale through centralized bidding. In 2020, the average selling price of the company's retail and wholesale used cars will be 20700 dollars/5960 dollars respectively, and the average gross profit per car will be 2.110/990 dollars.

Revenue from extended warranty services and other services: The extended service plans (EPP) of used car retail mainly include ESP (extended service plans) and GAP (asset preservation, guaranteed asset protection). ESP customers can get 60 months (limited by mileage) of free vehicle maintenance services from all Carmax stores and third-party service providers. GAP businesses can pay the outstanding balance of car loans after vehicles are lost or stolen. Service income: service income mainly includes income from labor and spare parts related to automobile maintenance, and income from car owners (including ESP project owners) returning to the store for maintenance. In 2020, the gross profit margin of other businesses, including EPP and service revenue, will be 64.6%, and the revenue and gross profit of single car will be 760 dollars/490 dollars respectively.

According to the company's financial data, the four business segments of the company are analyzed as follows:

First, Used car sales. CarMax is the largest used car sales company in the United States. Its used car sales business has a relatively stable market share. From the financial data, the used car sales business has a stable income and gross profit margin, which can bring considerable profits to the enterprise every year. It belongs to "cash cow".

Used car sales	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
income	24,437	15,714	17,169	15,173	14,392	13,271	12,439	11,675	10,306	8,747
cost	22,399	14,125	15,349	13,544	12,825	11,819	11,101	10,406	9,162	7,775
Gross profit	2,038	1,589	1,820	1,629	1,568	1,452	1,339	1,269	1,144	972
Gross profit margin	8.34	10.11	10.6	10.73	10.89	10.94	10.76	10.87	11.10	11.11

Source: financial reports

Second, The annual revenue of automobile wholesale sales business keeps a steady growth, and the market share is also gradually expanding, with a relatively stable gross profit rate. There is a large market space in the future, which belongs to "Stars".

Wholesale automobile sales	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
income	6,764	2,669	2,500	2,393	2,181	2,082	2,188	2,049	1,823	1,760
cost	5,999	2,245	2,046	1,962	1,789	1,720	1,800	1,684	1,510	1,451
Gross profit	765	423	454	431	392	363	388	365	314	308
Gross profit margin	11.3	15.86	18.17	18.01	17.99	17.41	17.74	17.81	17.21	17.51

Source: financial reports

Third, As early as 2015, carmax stopped its new car sales business, so the new car

sales business belongs to the company's "thin dog business"

New car sales	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
income	-	-	-	-	-	-	-	240	212	208
cost	-	-	-	-	-	-	-	234	208	203
Gross profit	-	-	-	-	-	-	-	6	5	5
Gross profit margin	-	-	-	-	-	-	-	2.50	2.12	2.41

Source: financial reports

Forth, Other sales and income includes service revenue such as extended warranty, maintenance and loans, which can deepen the connection with customers, meet customer needs and improve customer stickiness.

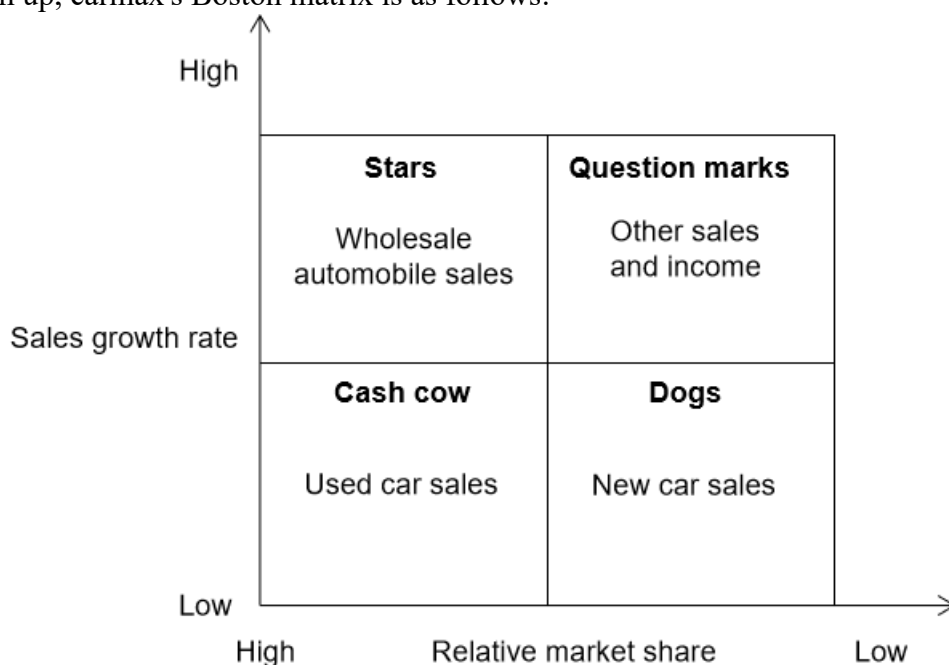
Other sales maintain a high growth rate every year and a very high gross profit rate.

Although the market share is low, there is a broad market space in the future, which is a "question mark"

Other sales and income	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
income	700	568	650	607	547	522	522	305	233	249
cost	2	201	203	187	178	153	230	57	6	6
Gross profit	485	367	448	421	369	369	292	248	187	180
Gross profit margin	69.27	64.62	68.86	69.29	67.46	70.69	55.96	81.33	80.19	72.33

Source: financial reports

To sum up, carmax's Boston matrix is as follows:



3.2 PEST Analysis of Carmax

3.2.1 politics

In the United States, as the official standard for second-hand car transactions, the ADA second-hand car price guide will be periodically adjusted according to market conditions. This guide restricts car dealers to set the price for second-hand car transactions. In the 1980s, the U.S. government implemented the "lemon law" for second-hand car transactions, requiring all second-hand car dealers not to sell defective and unqualified second-hand cars to consumers, and consumers have the right to claim compensation. In addition, the U.S. government also stipulates that vehicles with different mileage have different warranty periods, and those exceeding the standard will be directly scrapped or withdrawn from the circulation market. The government's strong behavior has deterred some "illegal" car dealers. In addition, the popularity and improvement of the second-hand car certification mechanism have ensured that the vehicle source valuation will not have too much water. In the United States, the atmosphere of second-hand car trading is relatively relaxed, and consumers' purchase behavior has become a light decision, which does not need to be considered too much. Whether it is the price or the quality of the car, legal documents play a role in ensuring.

3.2.2 economy

The annual sales volume of used cars in the United States is about 40 million, corresponding to an industry scale of \$600-800 billion. The trading volume of the used car market in the United States remained at about 40 million vehicles, and the overall market was becoming mature and stable. In terms of average price, according to Edmund, the average transaction price of used cars in the United States has steadily increased from US \$17000 in 2013 to US \$20600 in 2019, mainly due to the increase in the proportion of new cars less than 4 years old in the sales structure of used cars, as well as SUVs, pickup trucks and other models with higher prices.

When the macro-economy fluctuates, the trading volume of second-hand car market is relatively stable. Take the global financial crisis in 2008 as an example. The sales volume of new cars in 2007-2009 was affected by the macro situation. The sales volume was respectively - 3.5%/- 18.0%/- 21.4% YoY, while the sales volume of second-hand cars in the market was respectively - 2.8%/- 11.8%/- 2.7% YoY(Wall Street Journal,2021). The decline was narrower than that of new cars, and the market recovery speed was ahead of that of new cars; The second-hand car industry is less affected by the economic downturn, mainly because: 1) second-hand cars have a high cost performance ratio, and some purchases and replacements need to be transferred to second-hand cars; 2) second-hand cars have a low unit price, which requires less capital or cash flow, and second-hand car transactions are less affected by the decline in residents' income.

After the COVID-19, the second-hand car market also showed strong robustness. According to the Wall Street Journal, in April 2020, the sales of used cars in the United States were - 38% (new cars - 46%) year on year, and then rebounded rapidly. With the gradual elimination of epidemic control measures in June, the sales of used cars were 17% higher than the forecast before the epidemic. In addition, after the epidemic, consumers are more inclined to buy second-hand cars than new cars,

bringing about an increase in demand and price of second-hand cars. According to Edmund, the authoritative information website of second-hand cars, the average price of second-hand cars in the United States rose by 708 dollars to 21600 dollars in July 2020.

3.2.3 society

In the process of second-hand car trading, in addition to the vehicle price, another important factor is integrity. The United States has spent decades to establish standards, but also experienced the problem of lack of integrity. Up to now, although the second-hand car trade in the United States has relied on policy protection and technology, the blind spot of the industry still exists. The devil is bigger than the devil. The introduction of the "lemon law" cannot prevent the problem cars from flowing into the second-hand car market. With the improvement of American national safety awareness and moral awareness, it is rare for "black hearted car dealers" to "bleach" problematic cars in the circulation of second-hand cars, in which corporate ethics plays an important role.

3.2.4 technology

The United States mainly relies on technical means. The used car valuation industry in the United States started early. Now it has a fairly perfect valuation system and has established a relatively standardized trading mode. Basically, the valuation can be carried out comprehensively through the historical vehicle VIN and technical testing equipment. The United States has introduced policies on second-hand car transactions to ensure transactions. At the same time, their vehicle information systems have corresponding external interfaces. Enterprises like KBB can access the vehicle management department's information on vehicles. With the vehicle source data and vehicle source quality data supported by policies, combined with the big data modeling, analysis and valuation system, the drawbacks of second-hand car transactions in the United States are also eliminated.

3.3 SWOT Analysis of Carmax

3.3.1 S

① Scale advantage. CarMax already has 220 used car stores in the United States. Compared with new car buyers, the demand of second-hand car buyers is more diversified, which depends on abundant single store inventory. The single store inventory of CarMax's "hypermarket" is about 500 units, far higher than the industry average. The single store inventory of some large stores even reaches 1000 units, providing customers with rich choices.

② Pricing capability. CarMax has a large amount of first-hand and fresh transaction data and an iterative quotation system, which can be more accurate than peers.

③ Retail gene. CarMax has successfully opened and stabilized its leading position in the second-hand car retail market with the chain retail model, so it has accumulated profound experience in the supply chain and channel management, and has a deep

understanding of the consumer market.

④Capital market assistance. CarMax has also been favored by investors in the New York Stock Exchange for a long time. Since its listing, its stock price has risen more than 8 times, and its current market value is about 16 billion dollars.

3.3.2 W

The used car retail sector in the United States is highly fragmented, with the company's share of the industry as Top1 being only 3.2% and CR10 being about 7%. Although there is room for the efficient leader to increase its share, there is still fierce competition.

3.3.3 O

The lack of "core" leads to the price increase and the demand for second-hand cars increases. The epidemic at the beginning of 2020 has reduced or even stopped the production of factories of chip manufacturers around the world. After the epidemic has been preliminarily controlled, the demand for chips in the automobile manufacturing industry has greatly increased. However, due to the long production expansion cycle of materials such as upstream wafers of chips and the impact of epidemic on packaging capacity for many times, the global chip shortage has been caused. This makes the current supply of new cars insufficient, the price increases, and the demand for used cars as substitutes increases.

3.3.4 T

- ①If the epidemic situation in the United States continues to deteriorate, it will also have an impact on the used car industry;
- ②Price fluctuation of second-hand car market caused by new car price reduction
- ③The bad debt rate of the company's auto finance accounts receivable increased

3.4 The Strategic Choice of Carmax

3.4.1 Build trust with customer satisfaction as the goal

Behavior accumulates in time and space, forming brand trust. When the company entered, the used car industry was "scattered" but "poor": before the establishment of CarMax in the 1990s, the used car industry in the United States was very fragmented, with fierce competition among small dealers, highly asymmetric market information and poor customer experience. Since its establishment, the company has been committed to building a second-hand car "supermarket chain" and insisting on providing "customer satisfaction" services. By continuously opening stores, the company has expanded its service concept to more regions, contacted more customers, spread its brand, and formed brand trust through time testing and precipitation. Internally, through employee training and management mechanism innovation, employees are trained to form a unified corporate culture, and finally one of the barriers of the company is brand trust.

First, Sell the car to Carmax: transparent price, valid for 7 days, no bargaining. The

company assesses the value of vehicles for customers free of charge. The collection price is calculated based on the CarMax system. The price of vehicles depends on downstream demand, the level of similar garage storage, etc. The sales personnel do not have the pricing power, so it is more fair and transparent. On the other hand, the car price is valid within 7 days and cannot be negotiated, so as to ensure the stability of the company's pricing system. Building trust helps to obtain high-quality car sources. Because individual sellers have the best car supply, and 36% - 41% of the company's retail car supply in the past five years comes from individual sellers.

Second, Purchase from Carmax: 7 days return, 90 days warranty. The company has a set of quality standards. Every car needs to pass the quality test before it can be sold to consumers. Individuals who buy a car from CarMax can return it within 7 days without any reason, and there is a 90 day/4000 mile warranty

Third, Internal management: the salesperson has a fixed commission for each transaction. The salesmen of traditional second-hand car dealers are mostly based on the commission of transaction profits, so the salesmen pursue the profits of a single transaction, which is very likely to harm the interests of customers and the company's credit, resulting in reduced turnover speed and overstock of inventory. The practice of CarMax is to make a fixed commission on each transaction of the sales personnel, so the sales personnel have greater incentives to improve customer satisfaction with better services, so as to facilitate more transactions.

3.4.2 Standardization establishes the foundation for expansion

In terms of personnel management, the company conducts unified training for employees, and penetrates the concept of customer satisfaction. IT systems and processes ensure that every store feels the same. In addition, the company has built a second-hand car trading store of "hypermarket" to create a broad, bright and tidy store image. The Logo also draws on the Logo design style of IKEA, Walmart and other retail brands, giving a concise impression. Standardized store image and personnel management lay the foundation for expansion.

3.4.3 Enrich the inventory and provide customers with diversified choices

Compared with new car buyers, second-hand car buyers have a more diversified demand for the brand, model and service life of vehicles. Sufficient single store inventory can provide sufficient choice space for second-hand car buyers. The average single store inventory in the used car industry is only about 250 units. CarMax has expanded the single store inventory to about 500 units with its "hypermarket" strategy, and the single store inventory in some large stores has even reached 1000 units, which provides customers with rich choices. At the same time, as early as 1998, the company has begun to use its own unique AutoMation inventory management system, which enables customers to search the images and information of models in the inventory that meet their functional and price requirements on the electronic touch screen, which is more helpful to meet customer needs.

3.4.4 Self operated financial services with high penetration make the loan purchase process more convenient

The financial penetration rate of the second-hand car industry is only 54.6%, while the financial penetration rate of the company's retail end has reached more than 75%. The company provides customers with self operated financial services, and with the help of AutoMation system, customers can submit financial applications through electronic channels, and connect with self operated financial services and third-party financial providers. It usually takes only 8 minutes for customers to complete the loan process, which greatly saves customers time and avoids the trouble of paperwork application

3.4.5 Improve customer loyalty and satisfaction with comprehensive warranty extension and after-sales service

The company has provided extended service plan (ESP) and secured asset protection (GAP) for customers, which can respectively provide after-sales extended warranty maintenance services and loan repayment after car theft. In 2019, the retail penetration rate of ESP and GAP reached 61% and 19% respectively. Extended protection improved customer satisfaction with after-sales service and loyalty to the company. In addition, because the company has its own used car refurbishment site, technicians and corresponding capabilities, the company's extension and after-sales service is more convenient, and its marginal cost is also decreasing significantly.

4. Conclusion

4.1 Carmax has greater opportunities under the epidemic situation

The lack of "core" leads to the price increase and the demand for second-hand cars increases. The epidemic at the beginning of 2020 has reduced or even stopped the production of factories of chip manufacturers around the world. After the epidemic has been preliminarily controlled, the demand for chips in the automobile manufacturing industry has greatly increased. However, due to the long production expansion cycle of materials such as upstream wafers, and the impact of epidemic on packaging capacity for many times, the global chip shortage has been brought. This makes the current supply of new cars insufficient, and the price increases. As a substitute, the demand for second-hand cars increases, so does the price. In December 2021, the average price of used cars in the United States will be 29000 dollars, an increase of about 7000 dollars compared with the beginning of the year.

During the epidemic, the growth of second-hand car business also benefited from the advance deployment of "online" business. In 2018, the company began to launch the "omni channel" strategy, where users can obtain the whole process of car viewing, comparison, ordering, financial services, and distribution services through online channels, or they can choose to combine online and offline shopping experience,

initially select cars online, and test drive and sign contracts offline. Online channels can make consumers' experience more convenient and clear, and are an important supplement to the company's strategy to help the company obtain more shares. Rich inventory and electronic data information are the cornerstone of online channel development.

4.2 While Carmax improves customer experience, it also needs to apply technology to solve buyer bottlenecks and improve procurement efficiency

The buyer is the biggest bottleneck for second-hand car enterprises to expand. The ability of second-hand car enterprises to "select" products is reflected in the collection of cars. If they buy the right car at a reasonable price, they can sell it well. On the contrary, if the model they buy deviates from the needs of local consumers, it will occupy funds and cause inventory impairment. Therefore, the buyer is one of the core "assets" of the company. The car collection evaluation involves a lot of work, and the amount of evaluation is often four times that of the acquisition. It takes 30 minutes to 1 hour to evaluate a car. An experienced buyer can evaluate about 50 cars a week, facilitating about 12 deals. Therefore, buyers are the biggest bottleneck for second-hand car enterprises to expand.

5. Recommendations

5.1 Data guides accurate pricing to obtain optimal solution

Digitally collect vehicle information to form a constantly optimized quotation system. CarMax shall systematically and digitally collect the information of each vehicle, such as incoming calls, arrival at stores, test drives, purchase intentions, etc., and conduct electronic data tracking. Based on the data and algorithm system, judge whether it can be sold within two weeks. If it cannot be sold, consider reducing the price, optimizing the inventory turnover rate and minimizing the depreciation caused by the overstock of second-hand garage. Specifically, the electronic tag is used to track the vehicle position to collect vehicle test drive information, track the vehicle parking position, etc. Each salesperson should be equipped with a handheld device to communicate real-time information to the central pricing department.

5.2 Massive data and iterative quotation system make pricing closer to the optimal price

Too high or too low a used car price will have a negative impact on ROE: when the price is too low, the gross profit will be damaged; when the price is too high, although the gross profit of a single car is considerable, it will affect the turnover speed, reduce sales, or cause financial expenses, impairment losses, etc. Therefore, accurate positioning of the "optimal" price is the embodiment of the company's

competitiveness. CarMax has a large amount of first-hand transaction data and an iterative quotation system, which can more accurately position the "optimal" price than its peers. Cars sold by CarMax have experienced fewer price adjustments((Guangdong Huang, Hong Luo, and Jing Xia),). 70% of cars can be sold without price adjustment, and each price adjustment is smaller and the total price adjustment is smaller, which reflects the company's ability to quote and adjust prices accurately.

5.3 Technology application solves buyer bottleneck and improves procurement efficiency

Improve the information system and improve the procurement efficiency. Improve IT system, collect all kinds of information such as inventory, transaction and store service, and standardize process management. The buyer enters the vehicle information, and the system quotes according to the latest retail and wholesale transaction data and the company's inventory level to improve the buyer's vehicle collection efficiency.

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