

# Analysing the reasons for Huawei currently strategy on cars business

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**Abstract.** Since the 21st century, people's demand for new energy has become increasingly high, and new energy vehicles have become a promising emerging industry. The purpose of this study was to find out why Huawei only collaborates with car companies but does not manufacture its own cars. This research applied data and information from Huawei's research and development investment, revenue data, and sales in the new energy vehicle market for analysis. The analysis's results showed that one of the main reasons was that Huawei's business focus is not on car manufacturing, and the article suggested that Huawei should focus on technology development and upgrading. The second reason was the fierce, cutthroat competition in the market, and this paper suggested that Huawei strengthen cooperation with automobile enterprises. The third reason was that the cost of making cars alone is too high, and Huawei is advised to wait for a good time before making cars. This article filled some of the research gaps on Huawei and can provide relevant industry practitioners with some reference for analysing the new energy vehicle market and enterprise development strategies.

## 1 Introduction

### 1.1 Research background

In the 21st century, the technology research and industrialization development of new energy vehicles have received a growing amount of attention due to the persistent lack of international energy supply, the persistent rise in crude oil prices, and the growing demand for global environmental protection. New energy vehicles have entered the market for automobiles and are steadily becoming the dominant force. According to data from the China Association of Automobile Manufacturers, the production and sales volume of new energy vehicles reached 2.291 million and 2.222 million from January to April 2023, respectively, with a year-on-year increase of 42.8% and a market share of 27%; exports of 348,000 new energy vehicles had a year-on-year increase of 170% [1].

Huawei, a leading global provider of information and communication technology solutions that consistently ranks in the top 100 of the Fortune 500, is currently focused on the information and communications technology (ICT) sector and is committed to achieving a future information society and constructing a better, fully connected world. It has established the 2012 laboratory and made substantial investments in research and development in a variety of disciplines, including intelligent systems, new energy, and structural materials. During this time period, Huawei, despite possessing a number of industry-leading technologies, chose not to introduce its own brand of new energy vehicles. Instead, multiple "no car" announcements were made.

In the field of research, Huawei, one of the world's largest telecommunications equipment manufacturers, is a hot topic, and the research content varies. Zhu and Zhang studied the shareholder, management, and employee income structures of Huawei based on the changes in Huawei's equity and its unique equity incentive methods [2]. Ge Song studied Huawei's marketing channel strategies in the new environment based on the current marketing situation of Huawei mobile phones in China [3]. Ming Duan also conducted research on Huawei's use of graphene batteries to enter the electric vehicle industry [4].

### 1.2 Research gap

There are many academic papers on Huawei's research, but most of them focus on Huawei's operations, marketing, technology development, and product launches. Against the backdrop of the booming new energy vehicle market, on March 31, 2023, Huawei founder and chairman Zhengfei Ren once again signed an Executive Management Team (EMT) resolution on the automotive business, emphasizing that "Huawei does not manufacture cars, with a validity period of five years," and completely prohibiting the exposure of Huawei brands in automotive design. This is the second time Huawei has issued an EMT non-vehicle declaration. In the three years following Huawei's announcement that it would not manufacture cars in November 2020, Huawei actively collaborated with major automotive companies, occupying an important position in the field of new energy vehicles by exporting its intelligent systems and

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drawing on rich experience. In 2023, Huawei's first EMT agreement is about to expire, and people conjecture that Huawei is about to truly start manufacturing new energy vehicles on its own. However, Huawei has continued its previous strategy of not manufacturing cars. This decision, which is contrary to people's or market expectations, received attention and discussion from the news and various media outlets after its appearance. However, there were no research-oriented papers to explore the reasons why Huawei made the decision not to build cars, resulting in a research gap.

In order to fill this research gap, this paper will explore this topic and raise research questions: why does Huawei not launch its own brand of new energy vehicles? Investigating this topic can help the public and relevant industry practitioners have a clearer understanding of Huawei's positioning and corporate strategy and also further understand the development prospects of emerging technology companies in the context of new energy and how to better implement strategic policies.

### 1.3 Fill the gap

This article will undertake a detailed analysis of Huawei as a research case to address research issues. This article will investigate the diverse technologies and equipment exported by Huawei in the field of new energy vehicles, analyse the underlying causes of the problems, demonstrate their impact, and conclude with reasonable recommendations.

## 2 Case description

Shenzhen-based Huawei Technology Co., Ltd. was founded in 1987. Huawei's business activities include development, manufacture, sales, technical services, engineering installation, maintenance, consultation, agency leasing, and other legal activities. Huawei's strengths are new technologies, a decent corporate culture, a sensible organizational structure, and great customer service. Its development strategy stresses technology investment and innovation, optimizes social control of existing products, expands new service models, improves service systems, and offers safer, more dependable, and more sustainable services. Huawei's strengths in automotive processors, internet vehicles, intelligent driving, battery technology, and energy management may strengthen the new energy vehicle industry and boost its growth.

In 2016, the Watt Laboratory of Academia Sinical of Huawei announced at the 57th Japanese Battery Conference that it had accomplished a major research breakthrough in the field of lithium-ion batteries and launched the industry's first high-temperature, long-life graphene-assisted lithium-ion battery. Graphene-assisted lithium-ion batteries will also help electric vehicles maintain long-lasting endurance in high-temperature environments.

Huawei has unveiled its operating system, the Huawei Advanced Intelligent Driving System. The system debuted in the AITO Wenjie M5 Huawei Advanced

Intelligent Driving Edition. In 2020, Huawei released the Huawei Inside (HI) intelligent car solution, aiming to create high-quality intelligent connected electric vehicles through Huawei's full stack of intelligent car solutions and deep cooperation with car companies in an innovative manner. This solution includes over 30 intelligent components, including computing and communication architecture, an intelligent cockpit, and intelligent driving. On April 17, 2021, the Alpha S sedan equipped with Huawei HI services was released, which is also a high-end pure electric mass-produced sedan equipped with Huawei's intelligent cockpit, Hongmeng Car OS. The Avita 11, as the first intelligent electric vehicle under Avita Technology, is also equipped with an HI solution.

HiCar employs Huawei's high-performance Qilin 990A chip for vehicle intelligent terminals. Huawei HiCar provides smart connections for people, cars, and homes in all situations. It brings smartphone apps and services to cars. Huawei HiCar, Celes SEP200 motor, and Huawei DriveONE three-in-one electric drive system power the Celes Huawei Intelligent Selection SF5. Intelligent oil cooling technology makes the DriveONE electric drive system stand out.

It can be seen that Huawei's shadow exists everywhere in the new energy vehicle market. Huawei's entry into the new energy vehicle industry is a huge transformation for the entire industry. Especially in the field of intelligent driving, Huawei's deep technological empowerment is having a profound impact on the industry. However, Huawei has not yet created or launched any new energy vehicles under its own brand. For a period of three years, Huawei will not manufacture vehicles, according to the EMT resolution it issued in 2020, titled "Resolution on Business Management of Intelligent Vehicle Components." In 2023, Ren Zhengfei signed the resolution again, with a validity period of five years.

This article will explore the reasons why Huawei currently only assists car companies in the field of new energy vehicles and does not manufacture its own cars based on the above phenomena and provide reasonable suggestions.

## 3 Analysis on problems

### 3.1 Huawei's focus is not on car manufacturing

Huawei's present development focus is on technological development and upgrading rather than automobile manufacture. Huawei's 2022 annual report demonstrates that its general business is solid and that it will continue to grow R&D spending in the future. In 2022, R&D investment will be 161.5-billion-yuan, accounting for 25.1% of annual sales [5]. Huawei's R&D expenditure of more than 100 billion yuan is mostly focused on chip technology, cloud computing, artificial intelligence, and software development. In the automobile industry, Huawei reported that its cumulative investment in the Intelligent Vehicle Solution Business Unit (BU) has reached 3 billion US dollars [6]. Although this is a significant sum, it cannot be deemed a key project in terms of proportion. In terms of industry, Huawei's ICT

infrastructure business revenue in 2022 was 354-billion-yuan, accounting for 55% of revenue in the present year [5]. The terminal business comes next, with a revenue of 214.5-billion-yuan, accounting for 33% of yearly revenue [5].

There are three main models for Huawei's automotive business: one is the parts model, where Huawei charges fees for selling parts to car companies; The second type is the Hi deep cooperation mode led by BU, where the rear of the vehicle will have a "HI" logo; and the third type is the "smart car selection" model led by terminal business groups, with Huawei leading product definition research and development and design, and vehicles sold in mobile channels. As of the end of 2022, Huawei has launched over 30 smart car components and shipped nearly 2 million sets of components, including products and solutions such as smart cockpit, smart driving, smart electric, smart car cloud, and millimetre wave radar [6]. From Hongmeng Car OS, Hi Car, and Drive One, it can be seen that Huawei's current advantage in the field of new energy vehicles is intelligent technology. Compared to the equipment output route for cars, Huawei is more inclined to cooperate with major car companies for technology output. From the perspective of Huawei's entire business, there are still many important investment directions for Huawei, such as smartphones, the next-generation Internet of Things with Hongmeng and Euler OS as the core, Huawei Cloud, and 6G. Overall, car manufacturing is not even within Huawei's current target range, and car manufacturing is not Huawei's advantage.

### 3.2 Over fierce competition

Although the manufacturing and sales of intelligent vehicles are promising and hot fields, the competition is also very fierce. The market remains unchanged, and both traditional car companies and new car manufacturing forces will face fierce cake-splitting wars.

The "price war" that Tesla started at the beginning of the year in 2023 heightened rivalry between automakers. At present, traditional fuel vehicles are already on the same track as new energy vehicles, and "selling cars at a loss" has occupied market share, becoming the norm for most traditional car companies and new forces in the industry [7]. The sales of the new HI version of Jihu Alpha S, priced at nearly 400000 yuan, were dismal, and there was even no hope of improvement. The sales of Aveta in January and February of this year were 1415 and 2018, respectively [8]. The price and configuration of the single-motor version launched in March this year are more competitive, but it is still waiting for the market to break out. The Wenjie series under smart selection mode delivered a total of 75000 vehicles last year, but only 3505 vehicles were delivered in February this year, a decrease of 21.68% compared to the previous month [8]. Moreover, due to the impact of the price war, there was no sign of improvement in March, indicating a clear lack of momentum. These are some of the challenges that Huawei may encounter after joining the new energy vehicle manufacturing market. One of the reasons why

Huawei did not immediately join the market was to avoid the aforementioned risks.

### 3.3 High cost and risk

Automobile manufacturing is a large industry, not only because of hardware costs but also because of the huge industrial chain that needs to be maintained. For Huawei, cross-border car manufacturing costs and risks are too high. Automobile manufacturing requires a large number of chips, and Huawei has to increase research and development investment to avoid being stuck in the neck if it wants to build cars without the freedom to introduce advanced foreign chips. Chip development is time-consuming and labor-intensive, and it is a bottomless pit that continuously absorbs financial and material resources. In the automotive business, Huawei revealed that since the establishment of the intelligent vehicle solution BU, the cumulative investment has reached 3 billion US dollars, and the research and development team has reached a size of 7000 people [6]. In 2022, Huawei's intelligent vehicle solution business revenue accounted for only 0.3% of Huawei's total revenue [5]. Such data is clearly not proportional to Huawei's investment in the automotive business. Although Huawei has sufficient influence in the field of smart cars, the results are not satisfactory.

In addition, Huawei had revenue of 891.4 billion yuan and a net profit of 64.6 billion yuan in 2020 [9]. In 2021, the revenue was 636.8 billion yuan, and the net profit was 113.72 billion yuan [9]. In 2022, the revenue was 642.3 billion yuan, and the net profit decreased significantly by 35.6 billion yuan [9]. It can be seen that Huawei's ability to make money is weakening under the premise of being boycotted.

If Huawei still needs to expand their business and build cars at this time, it will be a huge pressure for Huawei. If Huawei fails, it will undoubtedly add insult to injury and have a huge negative impact on the Huawei brand.

## 4 Suggestion

### 4.1 Keep the business strategy

Given Huawei's relatively low R&D investment and profit ratio in the smart car business, this article contends that Huawei should continue to focus on technological output in the field of new energy vehicles within at least five years of the EMT statement at this stage. Given Huawei's limited resources, it is not possible to fully cover all commercial projects. 5G and 5G mobile intelligence are critical components in establishing Huawei's reputation and expanding its brand influence.

As a result, 6G research & development and commercialization will be critical tasks for Huawei to focus on in order to maintain its competitive advantage. Huawei's intelligent car solution business is an extension of Huawei Cloud and Huawei Intelligent Systems' collaboration, and the automotive sector is also thoroughly integrating with ICT technology. As a result,

the foundation and focus of Huawei should be on cloud, intelligent systems, and ICT technology research and development. Acting in this manner allows Huawei to maintain its industry leadership. Focusing on intelligent systems is advantageous not only for smart automobiles, but also for smartphones and other prospective development sectors.

#### 4.2 Concept of win-win cooperation

According to the situation of This article asserts that Huawei currently needs more cooperation and assistance compared to its competitors in the fiercely competitive intelligent vehicle battlefield. From Huawei's perspective, if we build cars alone, it will inevitably be a mid- to high-end product in the field of intelligent vehicles, and its pricing will not be low. Without accumulating sufficient brand trust and customer base, the high selling price will be a huge obstacle for Huawei's intelligent vehicle sales, making Huawei's intelligent vehicles lack a good competitive advantage in the field of new energy vehicles.

Another way is for Huawei to enter the field of new energy vehicles through cooperation with major automotive companies, utilizing its advanced technological advantages to help them build good cars and expand the influence and visibility of Huawei's brand. As more and more people drive and praise smart cars related to Huawei, if Huawei builds cars in the future, it will be beneficial to accumulate Huawei's experience in manufacturing smart cars and potential customers. If Huawei still does not build cars, it will also be beneficial to negotiate Huawei's future cooperation with car companies. Compared to building cars alone, cooperation between Huawei and car companies is currently a better choice.

#### 4.3 Huawei can make cars, but not now

According to the situation where Huawei will continue to spend a large amount of funds on research and development and its profitability is declining, this article asserts that Huawei can build cars but is not in a hurry to enter the car manufacturing industry at this time. The shortage of chips makes this a bad time for Huawei to build cars. Compared to traditional fuel vehicles, new energy vehicles have a greater demand for chips. The number of chips utilized in a single new energy vehicle has been upgraded from 1000 to 1200, and the number of chip types has also increased to approximately 150 [10]. Some models with better performance can even utilize up to 2000 chips [10].

Huawei's chip research and development level has not yet reached maturity, and the research and development speed and funding are far from enough to support the mass production of new energy vehicles. As the level of automotive intelligence continues to deepen, the proportion of chips in cars will continue to rise, and chip shortages will also become a long-term problem. However, relying solely on Huawei's high investment and meagre profits in smart car solutions is quite uneconomical for Huawei, so transformation is inevitable.

Huawei stated that it will not build cars within five years but did not say that it will never build cars. It can wait for funds to pass through the winter and has the ability to respond to crises before making cars. At that time, it will be an opportunity for Huawei to break the deadlock in the field of new energy vehicles.

## 5. Conclusion

In light of the brisk development of new energy vehicles in the automotive market, this article attempts to investigate why Huawei, a well-known company with a significant presence in the new energy vehicle market, has issued two consecutive statements stating that it will not manufacture cars. This article examines three factors that contribute to Huawei's decision not to build cars at the moment: Huawei's need to focus its R&D operations on other fields in order to maintain its advantages, the fierce competition in the new energy vehicle market in recent years, the low profitability of the automotive business and the high cost of car manufacturing, and a lack of chips and funds.

This article addresses a research gap in academic studies on the problem of Huawei not manufacturing automobiles, allowing readers to gain a fresh understanding of Huawei and serve as a reference for relevant industry professionals. However, this article's examination of the reasons why Huawei does not manufacture cars cannot be fully described, and there may be more reasons that are not discussed. More arguments can be contributed and enhanced in the next research by categorizing the reasons examined.

## References

1. J. Huang, *Annual research and consultation report of panorama survey and investment strategy on China industry*, (2023)
2. C.J. Zhu, Y.C. Zhang, *CN. Col. Eco.*, **11**, 45-48, (2023)
3. G. Song, Tra Fai. *Eco.*, **06**,60-62, (2022)
4. M. Duan, *Comp. & Net*, **02**, 75, (2019)
5. SOHU, *Automobile in Huawei's financial report*, (2023), <http://news.sohu.com>
6. *Securities Times*, (2023), <https://baijiahao.baidu.com>
7. *China News Net*, (2023), <https://baijiahao.baidu.com/s>
8. L. Xin, (2023), <https://new.qq.com>
9. *Huawei Annual Report*, (2022), <https://www.huawei.com>
10. BITAUTO, (2022), <https://news.yiche.com/>