



# The Failure of Producing New Energy Car in Huawei

Christine Cheung, Zeyuan Chen

Lingnan University, Hong Kong 999077, China

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**Abstracts:** The demand of new energy car in China is derived from the import of Tesla, which is a competitive firm in USA. Depending on its excellent function and advanced technology, it was very popular in Chinese market in recent years. Under this circumstance, many Chinese company specializing in mobile phone wanted to device new energy cars to compete with Tesla, such as Xiaomi and Huawei. However, this decision did not create high profit in these companies. They spent much money on new energy cars, but Chinese consumers did not like those cars of Xiaomi and Huawei. Compared to Tesla, the lack of core technologies contributes to low quality and high price of domestic new energy car. To solve these problems, Chinese companies should realize that what is the core competitive power of them, and what they should develop in the future. After justifying those direction of development, they can continue to increase input in smartphone and stop to spend much money on new energy cars.

**Keywords:** Huawei, new energy, failure

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## 1. Introduction

As a capital-intensive industry, automobile manufacturing requires a large amount of capital investment. Considering that Huawei is currently facing US sanctions, a large amount of capital shortage has to be considered, and when its investment in the field of automobile manufacturing is uncontrollable, avoiding being "dragged down" by the car is the top priority. More importantly, even if various problems such as capital, technology, products, and brands are solved, people believe that Huawei has the strength, but the status quo of the industry, which is not so profitable, continues to test Huawei's determination to enter the car market.

## 2. Statement of the Problem

As a multinational enterprise, Huawei has a strong scientific research strength and attracts many young scientists to help them to produce new energy cars. The products of Huawei apply some new technologies in multimedia, but the function of cars is the problem. Due to the lack of cooperation of car producers, the core technologies of new energy cars are not in the hands of Huawei. They can produce a car, but the internal technologies of cars can not satisfy Chinese consumers. To be specific, people can use multimedia when they drive these cars produced by Huawei, however, the driving experience can not satisfy Chinese young consumers. This is a big problem of new energy cars of Huawei, so they should pay attention to these problems.

## 3. Background

Three years ago, Huawei started to focus on new energy cars and wanted to monopoly in Chinese market. To compete with Tesla, Huawei wanted to produce driver-less cars and hoped that this technology could attract many Chinese consumers to buy them. However, this technology was under developing, and Huawei should spend much time improving technologies. On the contrary, Tesla owned more advanced technologies in new energy cars, and the excellent function attracted many young consumers. They pursued more comfortable driving experience, and Tesla could satisfy them.

Huawei never recognized the potential problems of their products, they transferred some multimedia functions of mobile phones to cars. Obviously, this decision could not change the fact that the car sale of Huawei was bad. Consumers paid more attention to the overall function of new energy car rather than the entertainment facilities in cars.[1]

The past 2022 can be described as Huawei's most difficult year, affected by multiple rounds of US sanctions, the previous global epidemic, the saturation of the smartphone market and other unfavorable factors, Huawei's performance has suffered unprecedented challenges. According to the latest financial report data, in 2022, Huawei will achieve a cumulative global sales revenue of 642.3 billion yuan, a year-on-year increase of only 0.9%, which is basically in a state of stagnation. In addition, Huawei's profit performance is even more worrisome.[2] Huawei's net profit of 35.6 billion yuan fell sharply

by more than 68% compared with the same period of the previous year, which is the first time in 10 years that Huawei's net profit has fallen sharply, and its future performance will continue to face pressure.

#### **4. Organization's interest**

Because of the bad car sale, the management layer gradually recognized the potential problems of new energy cars. In terms of energy, Huawei chose to cooperate with some companies which specializing in energy supply. Huawei acquired some technologies about how to reserve energy and reduce the cost of electricity.[3] Otherwise, Huawei started to provide components of cars to car producers, and it could make good profits from this decision. For example, Huawei provided over 30 products involved in vehicle operating system, intelligent driving, intelligent network connection, intelligent electric, intelligent vehicle control and intelligent cockpit to car producers. Based on the strategic planning of helping car producers to produce good cars, Huawei had two ways to cooperate with car producers. One was providing electric drive system, motor control unit and other software and hardware. Another one was providing overall design scheme to car producers. Because of these decision, other car producers could make progress in some intelligent technologies and Huawei could make profits from cooperation.

At present, the biggest problem facing China and even the world's giant car companies is the contradiction between the development model of traditional enterprises and the new demand for new manufacturing in the new era. In the past, car companies focused on improving the versatility of traditional components and systems, sharing design parameters, and modular sharing of production molds and auxiliary tools to achieve the purpose of reducing costs. In short, it's about creating a common platform for developing automotive hardware. However, in the era of intelligence, the weight of new cars in intelligent driving and intelligent cockpit is too high. Taking NIO as an example, its vice president said that the intelligent hardware he is responsible for accounts for roughly 20% of the cost of the vehicle, and after superimposing the value of intelligent software, the value of related intelligent products in the vehicle has accounted for a huge proportion.[4] With such a large proportion of intelligent products, it means that even if car companies come to the end of the road in the past, they will not be able to achieve real cost reduction and efficiency increase.

#### **5. Policy Options**

As a multinational enterprise, Huawei paid more attention on technology research and innovation, so it spent much money on these factors. For example, the input of product research was about 0.5 billion dollars, and it would double in 2021. To promote its core technology of new energy cars, Huawei employed many specialists to upgrade these products. Furthermore, Huawei chose to cooperate with some companies which had much experiences in producing new energy cars. The advantage was promoting the development of intelligent automobile technology, and creating some new alternatives in Chinese car market. But the research costs were too high to develop technologies of other products such as mobile phone. Otherwise, Huawei created a forum to discuss how to solve problems in overall function of new energy cars. It focused on some major problems which consumers reflected to Huawei. It was a good way to face problems and could collect some effective suggestions of consumers. The advantage was realizing the shortcoming and could improve technologies of products. But Huawei could not judge which suggestion is the best one. Also, Huawei increased investment in smart technologies, and applied some new facilities on cars such as entertainment facilities. The advantage of it was adding enjoyment of life in driving cars, so drivers could have more alternatives to pass the time. But drivers needed more practical functions of cars rather than these entertainment facilities.

Driven by the combination of technical strength and cost investment, China's automotive intelligence era is destined to need a platform or enterprise that can act as a locomotive, and Huawei's internal "car manufacturing faction" has also turned to this direction after being repeatedly ordered not to build cars in person. When talking about the new platform company established after the spin-off of Chebu, Yu Chengdong expressed the same intention.

In addition to the "needs" of the industry, Huawei's experience gained from more than 20 years of deep cultivation of underlying technologies and consumer business has also provided different degrees of software and hardware support for car interconnection. Among them, in the field of intelligent driving, Huawei's ADS 2.0 perception fusion solution may be "far ahead" to a certain extent. In terms of data used to train intelligent driving, ADS 2.0 is trained by Huawei's AI training cluster to build a rich scenario library. As of September 2023, the average mileage of long-distance pilots has increased to 200km, an increase of 75% compared to 114km in April. In terms of software, Huawei integrates Tesla's BEV bird's-eye perception capabilities and pioneers the industry's GOD 2.0 network (General Obstacle Detection, Identifying Special-shaped Objects), which can identify special-shaped objects that are not on the whitelist of general obstacles, and can understand obstacles of different shapes and sizes. At the same time, in conjunction with RCR 2.0 (road topology inference network, matching

navigation map and display network), it uses an algorithm architecture similar to Tesla's BEV+ occupation network to reduce the dependence on high-definition maps and cover more mapless scenarios to achieve functional implementation.

In the hardware ecosystem, Huawei's LiDAR and millimeter-wave radar are leaders in the industry, and Huawei has also actively deployed related companies for smart car sensors through Hubble Investment, including ZongHui xinguang, Focuslight Technology, Nanjing Xinshi, etc. It can be said that even if you look at the world, in the field of intelligent driving technology, except for Tesla, Xpeng, and Huawei are in the same echelon, other car companies are in a catch-up position. In the construction of the intelligent cockpit, which is known as the twin stars of the automotive intelligent era together with intelligent driving, Huawei's experience accumulated over the years in the consumer business has become the best basis for providing users with better services.

## 6. Recommendations

Huawei is a company which specializing in mobile phone, and its products are very popular in Chinese smartphone market. If it pays more attention on new energy cars, it maybe lose core advantages. Continue to research on mobile phone can help Huawei to find previous confidence and play advantages of itself. The profits of smartphone in Chinese market can compensate for previous losses. Furthermore, due to high costs on new energy cars, Huawei did not have sufficient resources and enough money to produce cars which was a failure to it. Stopping production of new energy cars and learning a lesson are good choices to Huawei. It should not emulate Tesla to produce new energy cars and should increase input on smartphone. Honestly, its previous patents on smartphone can help Huawei to be the most competitive company in China. Otherwise, Huawei can sell some advanced intelligent technologies to other car producers. So it can make good profit and help these enterprises to gain more from Chinese car market. The development of these companies also can let Huawei to acquire great reputation in intelligent technologies. It is a win-win strategy for Huawei and it should accept this strategy. Also, if Huawei still wants to produce new energy cars, It can acquire some advanced technologies from foreign countries and find a reliable partner to cooperate with it.

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