Tesla's Strategies to Achieve Positive Growth for Production and Sales During the COVID-19 Epidemic

Yushang Zhou*

College of Arts and Sciences, The OHIO State University, OH, 43210, US

Abstract: During the COVID-19 epidemic, many industries were hit hard by the impact of the epidemic. The outbreak first led to factory shutdowns, with virtually all factories worldwide except for China now closed and at least 120 automotive plants temporarily closed. Global car sales have also plummeted in the midst of the epidemic storm with people mostly shutting their doors. Yet, under these circumstances, Tesla Motors has achieved an increase in production and sales. The study found that Tesla's decisions on product manufacturing, supply chain and marketing strategies were the main strengths of its rapid growth.

1 Introduciton

During the epidemic, entity industries, were hit hard across the globe, and the automotive industry was no exception. Due to the epidemic, people are not going out as often as they used to, which indirectly leads to the desire to buy cars decreased. Similarly, due to the epidemic, many local automobile manufacturing plants have chosen to close their plants in order to protect the health of their employees, resulting in a significant decrease in the production of many automobile companies' products. However, one outlier emerged from this industry that received a severe blow - the Tesla Inc.

As a fledgling company with only nineteen years of history, Tesla arguably outperformed automotive industry stalwarts such as Mercedes Benz and BMW during the epidemic since 2020.

As shown in Figure 1, we can see that compared to 2019, both Mercedes-Benz and BMW have seen negative sales growth, but Tesla has seen a significant increase.

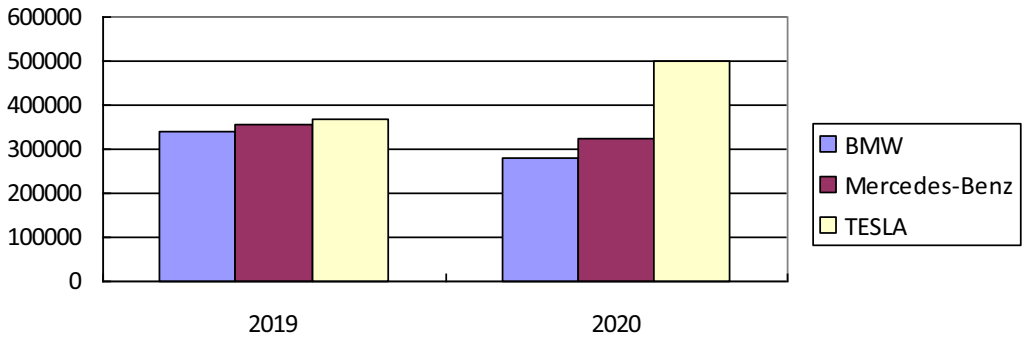

Figure 1 New Vehicle Sales for BMW, Mercedes-Benz and TESLA in 2019 and 2020[1-3]

Through Tesla's annual report and data survey, Tesla is leading in car manufacturing, supply chain and marketing strategy compared to other car companies, this article will analyse from these three points.

2 Introduction for Tesla

Tesla Technologies, known as Tesla Motors before, is the largest company for electric vehicle and solar panel in the United States. Tesla was first company who manufacture self-driving cars in the world, and by 2018, Tesla Motors Inc. had become the best-selling Electric Vehicles company all over the global. By October 2021, Tesla's market value exceeds $1 trillion [4].

The products under the Tesla Technologies umbrella are the Roadster, Model S, the Model X SUV, the Model 3, and the Model Y. The Model 3 is the best-selling electric

*Corresponding author. Email: zys20001220@gmail.com

car of all time in the world and became the first electric car to sell one million units worldwide in June 2021 [5].

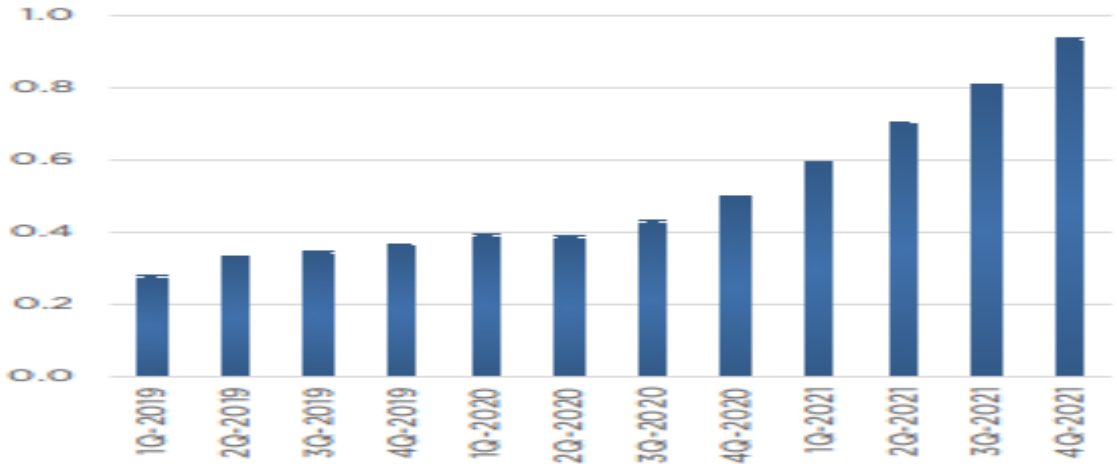

Figure 2 Tesla's car sales Every quarter (millions of units) [6]

Individually, Tesla's sales variations, through Figure 2 we can see, with the help of manufacturing, supply chain and marketing strategies, boost Tesla's total sales in 2021 by 87% compared to 2020 [6].

3 Manufacturing

The leading companies of car manufacturing like Ford, Volkswagen, Mercedes-Benz, BMW, Audi, these giant companies, they have a wealth of experience in production, nearly a century of car manufacturing history they played an important role.

Tesla, on the other hand, has a history of only 20 years, so it is always like a wild statement to say that it "knows manufacturing best" in front of a 100-year company. So, what is the core of Tesla's manufacturing? According to the impact report, we can simply summarize it as efficient full process production chain.

3.1 Highly efficient plant

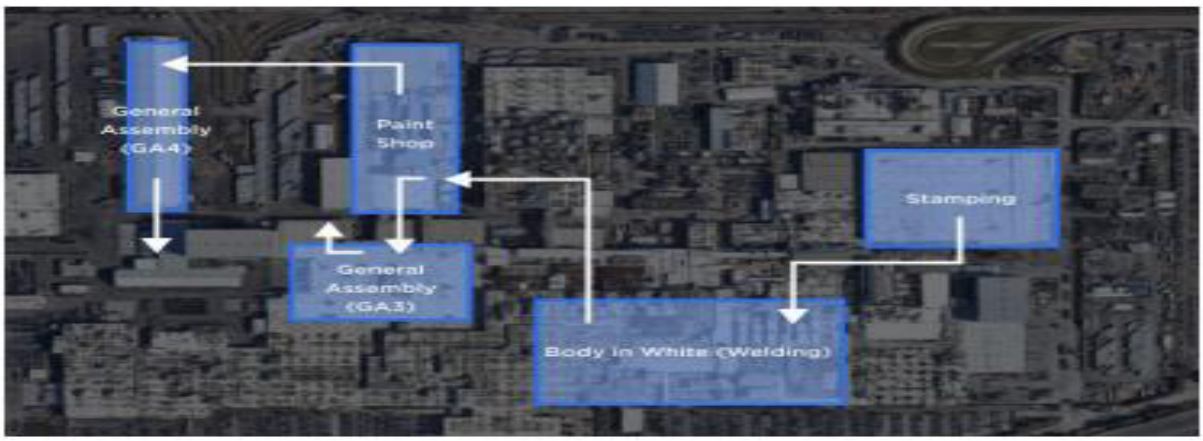

Figure 3 Structure Diagram for Tesla's Fremont facility [7]

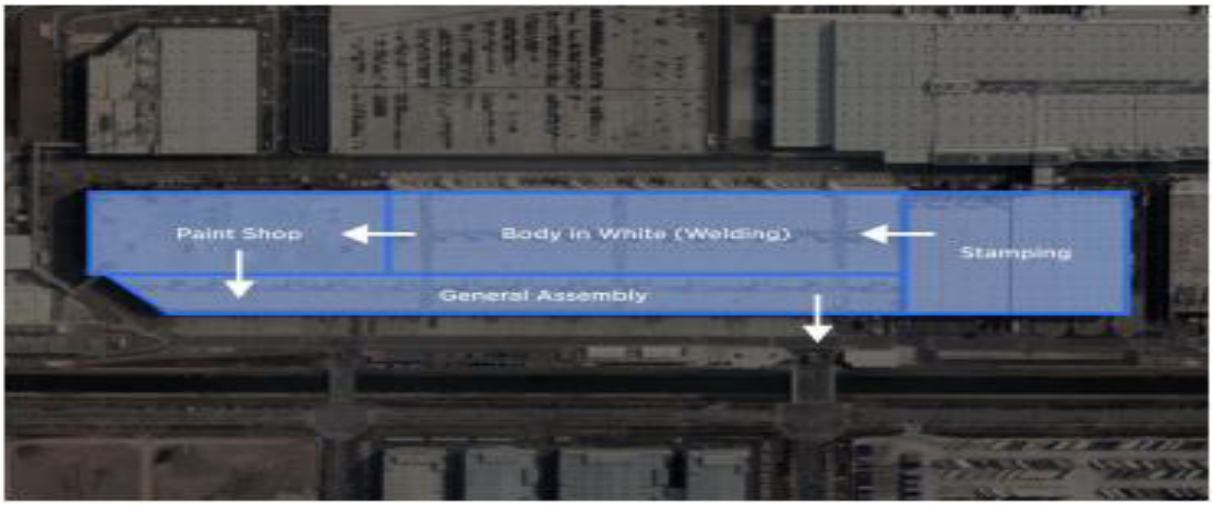

Figure 4 Structure Diagram for Tesla's Gigafactory in Shanghai [7]

From the overhead view of Figure 3 and Figure 4, it can be found that the layout of Tesla factories in different periods has experienced fragmentation (Figure 3) to concentration and then to 'chip-based' high integration (Figure 4). This has greatly enhanced the efficiency of the synergy between the workshops, and the flow of the whole vehicle and raw materials on the production line will become smoother.

Before the construction of Tesla's super factory in Shanghai was completed in 2019, Tesla was once in a difficult position of insufficient capacity, tight cash flow and even on the verge of bankruptcy. But with the opening of the Shanghai plant, benefit from the rational layout, the Shanghai plant's production efficiency is greatly improved, Tesla has greatly improved the production efficiency of the car. In 2020, Tesla achieved its first annual profit since the company's inception, with a net profit of $862 million.

3.2 Reduce energy consumption

To reduce energy consumption for heating and cooling, Tesla's next-generation factory uses insulated, low-emission windows; the total amount of waste heat recovered by the factory's compressor is equivalent to the thermal efficiency of 1 megawatt of natural gas.

At the Nevada Super Factory, the New York Super Factory and the California plant, the roofs of these factories are covered with solar panels, and by the end of 2021, Tesla had installed a total of 21,405 kilowatts of solar panels on its factories, and this scale continues to grow [7].

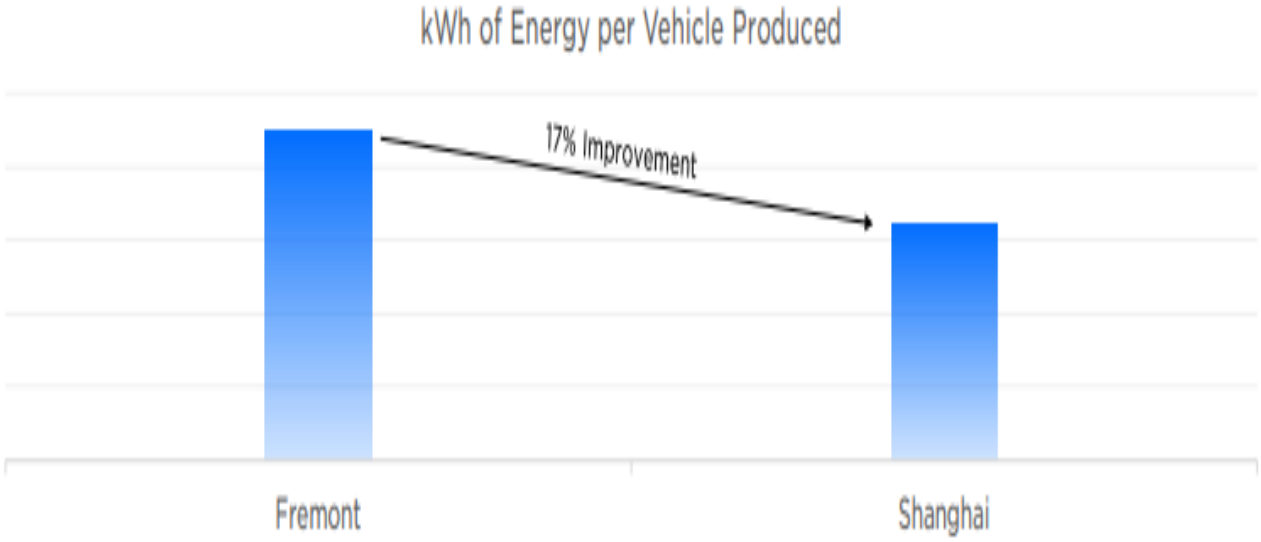

Figure 5 kWh of Energy per Vehicle Produced in Shanghai plant is 17% less than in Fremont plant [7]

From Figure 5 we can see, Tesla reported that they used 17% less energy per vehicle produced from the Fremont plant to the Shanghai plant therefore realize cost reduction.

4 Supply chain

Tesla's pioneering supply chain system can efficiently

improve the manufacturing efficiency of the factory. Morgan Stanley analyst Adam Jonas had this to say about Tesla: “Tesla is in a unique position when it comes to its supply chain. More accurately, Tesla is 5 to 10 years ahead of its competitors in dealing with these and other issues.” [8]. Perhaps Morgan Stanley is overly optimistic, but a 5-year gap is a huge difference in an era when smart electric is on the rise.

4.1 Control of upstream raw materials

Taking control of the supply chain upstream and downstream of raw materials is Tesla's main means of reducing costs. With the outbreak of the epidemic, companies in the manufacturing industry are now increasingly aware of the importance of mastering the supply chain of upstream and downstream raw materials. Talking about the supply chain, the primary topic is the raw material issue behind the recent "price increase wave" - for this, Tesla presents a clearer perception in the impact report, as well as the "whole chain" level of thinking: Cobalt, lithium and nickel are key raw materials for cathode production, accounting for about one-third of the total cost of batteries and playing an important role in improving vehicle range and safety performance. As minerals, they are challenged by socio-economic and environmental issues at their origin and are becoming increasingly scarce.

Competition for these valuable sources of raw materials is important to automotive companies. Tesla's strategy is to go straight to the source. In 2021, Tesla sourced more than 95% of its lithium hydroxide, more than 50% of its cobalt and more than 30% of its nickel directly from nine mining and chemical companies [7].

And it's not simply a case of 'pay with one hand, deliver with the others', Tesla also establishes contacts with local experts and community organizations, and even sends people directly to the place of origin to conduct 'research'.

For example, in the Congo, Tesla noticed the prevalence of artisanal and small-scale mining; in Argentina, Tesla realized the importance of using new technologies to save energy for "lithium extraction".

4.2 Recycling

Reducing resource waste by recycling batteries is also a way for Tesla to reduce costs. As the biggest difference between electric cars and fuel cars, that is, the gasoline used in fuel cars is disposable, however, the battery used in electric cars is recyclable.

Although the batteries designed by Tesla are designed to last for many years, it is inevitable that the batteries will be scrapped every year after use. Tesla reports that the batteries they produce are fully 100% reusable.

5 Marketing strategy

After ensuring the stability of the production chain, another important thing for auto companies is the marketing strategy. The outbreak of COVID-19 caught many companies off guard, but Tesla's marketing strategy was a good variation to meet the needs of local consumers.

Because of the epidemic, people often chose to stay behind closed doors to prevent themselves from being infected with the new coronary pneumonia. This is where Tesla's direct online store model comes into its own, as people no longer need to go to an offline 4S store to order a car, they just need to place an order on the internet. At the same time, Tesla also provides self-service pick-up service for different regions, shortening the traditional delivery process of about 2 hours to a quick mode of as fast as 20 minutes, and the whole pick-up process avoids the risk of close contact with other car owners and Tesla staff. For owners in need, Tesla also provides Home Delivery service in some areas of China [9].

In addition, Tesla also launched live car talk, online remote consultation and other over-the-air services to protect consumers' needs such as car purchase, after-sales and charging during the epidemic prevention and control period.

6 CONCLUSION

This paper focuses on the Tesla's decisions on product manufacturing, supply chain and marketing strategies. Tesla's solid manufacturing and supply chain, as well as its improved sales strategy in response to the epidemic, enabled it to achieve positive sales growth in production during the COVID-19 epidemic. Based on the results of the study, it can be concluded that the covid19 epidemic has led to a tendency to restructure the industry chain of automotive companies. Tesla companies have shifted most of their attention to controlling costs and online sales. Many olde automotive companies have performed slightly less well during the epidemic compared to Tesla, and Tesla's strategy is well worth their study and reference.

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