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Driving Sustainability and Electric Vehicles Evolution:

Tesla Company's Success Strategies

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Abstract

In the new era of industry 4.0 with increasing environmental pollution, it is necessary for companies to start thinking about implement businesses that can satisfy both. Tesla is a company that operates in technology area with the vision and goals to transfer the world to a clean and sustainable life. Moreover, Tesla decided to operate in a new and growing industry that might change the consuming behavior of the people all around the world, which is electric vehicles (EVs). What makes Tesla stand out from other car manufacturers when car industry is somehow coming to mature stage is that Tesla aims at making fully electric car instead of popular plug-in hybrid cars. In this report, we analyze Tesla company with multiple strategic analyses to study how Tesla is becoming one of the most successful companies with rapid growth these years – which includes SWOT Analysis, Three Levels of Strategy Analysis, Strategic Map Analysis, Porter's Five Forces Analysis, Value Chain Analysis, Resources and Capabilities Analysis and Porter's National Diamond Analysis. The results show that Tesla is leading the EVs industry at the moment with differentiation strategies and it will be more and more developed in the near future. Moreover, the success of Tesla comes from the support of many different factors – including governments from different countries. The success of Tesla can be a leading case for other companies to follow and it will slowly enhance the customers' consumption behavior into an emission free life and get the customers into using more environmentally friendly and sustainable products.

Keywords: Tesla, electric vehicles, strategic analyses, differentiation strategies, sustainability

Table of Content

List of Figures

List of Tables

Chapter 1 The research reasons for selecting Tesla as our case study

Nowadays, the market for fully electric vehicles is growing. The reasons are various, including new regulations on safety and vehicle emissions, technological advances, and shifting customer expectations. As consumers and governments pursuing eco-friendly, low-emissions transport options, Tesla, Inc. (TSLA) stands on top in the competitive car industry. As we know, Tesla experiences growth rapidly these years. Tesla is not just the fastest-growing car company. It is the fastest-growing company in the world. After almost twenty years in business development, Tesla has become one of the most beloved brands.

Therefore, the main reasons for our Tesla case study include:

- **Tesla is a fine research object with a sound business model for studying.**

  With the rapid sales growth occurring between these years, Tesla quickly became the most successful electric car firm so far. Tesla is aiming to become the world's first technology company that builds not only cars but also the world's most advanced autonomous vehicles. We suggest Tesla as our case study attracted by how Tesla grew at a breakneck pace and its unique business model to establish itself in the market.

- **Tesla gives the stylish product design and a luxury brand image.**

  The automotive products from Tesla develop an overall visual impression. The sleek and streamlined design has created such an engaged and loyal fanbase, which could be identified as the Tesla brand. Moreover, Tesla is considered a luxury brand since it is more expensive than most competing vehicles. Tesla's cars are lumped into the luxury category by automotive reviewing websites, as well as almost all automotive rankings and awards.

- **Tesla has capitalized on the sustainability trend and eco-friendly nature.**

  According to Musk, "the single largest macro problem that humanity faces this century is solving the sustainable energy problem – that is, the sustainable production and consumption of energy." Although electric vehicles do not necessarily reduce the consumption of fossil fuels or emissions overall, electric energy has the potential to lower emission power sources, such as coal or nuclear, being more widespread.

- **One of the key drivers for Tesla is "innovative" features while the whole automotive industry is forced to evolve.**

Musk states that "the only way I could think to address the sustainable energy problem was with innovation." With the trend of technology growth nowadays, Tesla has changed the outlook from the conventional automotive industry by including artificial intelligence (AI) in their cars and developing autonomous vehicles (AVs) to give competitive advantages over its competitors.

Chapter 2 Introduction

Tesla, Inc. is an American manufacturer of electric automobiles, clean energy generation and storage products such as solar panels, and batteries for cars and home power storage. Founded in July 2003 by Martin Eberhard and Marc Tarpenning as Tesla Motors, the company's name is a tribute to inventor and electrical engineer Nikola Tesla. In February 2004, via a US$6.5 million investment, X.com co-founder Elon Musk became the largest shareholder of the company and its chairman.

In 2020, Tesla had the most sales of battery electric vehicles and plug-in electric vehicles, capturing 16% of the plug-in market (which includes plug-in hybrids) and 23% of the battery-electric (purely electric) market. Through its subsidiary Tesla Energy, the company develops and is a major installer of photovoltaic systems in the United States. Tesla Energy is also one of the largest global suppliers of battery energy storage systems. Tesla believes the faster the world stops relying on fossil fuels and moves towards a zero-emission future, the better.

Tesla vehicles are produced at its factory in Fremont, California, and Gigafactory Shanghai. To create an entire sustainable energy ecosystem, Tesla also manufactures a unique set of energy solutions, Powerwall, Powerpack and Solar Roof, enabling homeowners, businesses, and utilities to manage renewable energy generation, storage, and consumption. By bringing cell production in-house, Tesla manufactures batteries at the volumes required to meet production goals, while creating thousands of jobs.

In the future, Tesla hopes to combine independent electric cars, batteries, and renewable energy generation and storage together and make them even more powerful.

Tesla’s car models include:

Fig 1. Model S (released in June, 2012).

Fig 2. Model X (released in September, 2015).

Fig 3. Model 3 (released in July, 2017).

Fig 4. Tesla Semi.

Fig 5. Model Y (released in March, 2020).

Fig 6. Tesla Cybertruck.

Chapter 3 SWOT Analysis

3.1 Internal Analysis

3.1.1 Strengths

1) Elon Musk

As the founder, CEO and product architect, he is a gifted entrepreneur and leader with a big fanbase (60,2 Mio Twitter followers) and stands as a brand himself.

2) Innovation: development of technologies for energy efficiency and storage, digital and cars (e.g. solar energy).

Tesla is one of the most innovative firms in the market, thanks to its continuous investment in R&D. Tesla has a high rate of innovation (not to mention the world’s first electric semi-truck and new sports car). This trust and expectation provide the company with a significant financial advantage by manufacturing competitive and profitable products. Tesla’s investment in developing new and advanced technologies in 2018 was only $1.8 billion, far behind its competitors. The company is therefore popular with people looking forward to the future of electric vehicle technology. A development boosts the company’s popularity and financial rewards.

3) Brand and marketing power

Tesla has leading and powerful brand influence but at low cost of marketing spend because of its market position, media presence and Elon Musk.

4) Strategic partnerships

Tesla is collaborating with big energy companies like Southeast APDA, Yes Energy, etc. These collaborations help in expanding Tesla’s renewable energy efforts in the global market and help to expand charging stations infrastructure.

5) Design of cars and customer experience

The brand is leading in design focus across products, vehicle engineering design and customer experiences (like the “Dog mode”, which was all over Social Media).

Fig 7. Tesla announces dog mode and sentry mode for its vehicles.

3.1.2 Weaknesses

1) One-man show

On the one hand Elon is a strength but at the same time he could appear to be a weakness: If Elon Musk would walk away, gets too busy with other projects (like SpaceX) or gets unpopular, what would happen to Tesla?

2) Numerous manufacturing problems

The higher the level of innovation, the bigger the mechanical difficulties and risk elements in the production. Tesla experiences continuous launch delays, manufacturing issues, and slow production ramps when launching new cars and other products. Tesla has been able to compete with the world's largest vehicle companies within a short time, but its production force is significantly smaller than others. The company e.g. only has one plant in California and can only produce a limited number of vehicles. For example, when it came time to launch the Model X, Tesla faced many manufacturing problems, which resulted in continual distribution delays. Tesla also faces challenges in terms of production costs, managerial resources, and space expansion for its Gigafactories.

3) Batteries shortage

Electric vehicles rely on minerals that are rapidly being used with as yet not secure alternatives.

4) Financial performance

Tesla had a high debt-to-earnings ratio, because of its high operational costs and limited production capacity. It has only recently made a profit. The company's failure to cease losing money has a detrimental impact on investors' opinions and share values.

5) Small target group

Tesla's strategy was to maintain a premium vehicle company image while presenting premium products to a limited market. The high pricing of the products leads to a narrow market, which makes expanding growth difficult. Tesla's Model 3 attracts a broader audience despite its lower price, but it still only reaches a limited group of people.

3.2 External Analysis

3.2.1 Opportunities

1) Government Incentives for the electric automobiles

There are significant increases in purchase intent for Electronic Vehicles, particularly in Europe and China. In China, Tesla has gained a lead over local rivals since opening its Shanghai Gigafactory in 2019. One of the reasons is that there is a subsidy reimburse for those EVS buyers. The budget per each is different depending on a vehicle's range, and the standard pay-out last year was roughly RMB18,000 ($2,800). In Europe, there are a lot of incentives provided for EVs buyers including an exemption for the automobile tax, the car insurance tax, and grants.

Those government incentive aims to raise people' s awareness and consciousness about sustainability, and this would good opportunity for the company to gain more money by selling more products.

2) EV charging infrastructure

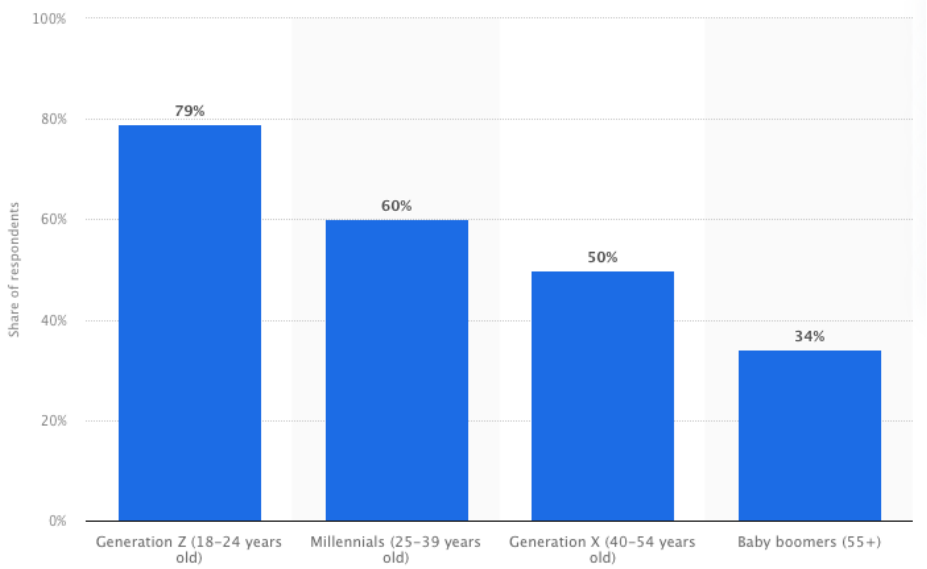
The European Commission supports member states in expanding electrical charging infrastructure. The number of charging points in the 27 EU nations and the UK increased by roughly 36,000 a year from about 34,000 in 2014 to 250,000 in the last September 2020. By having a lot of car chargers, it would be easier for their target customer to buy the product.

3) Increasing preference for the clean energy

The poll shows the willingness of customers from worldwide to pay more for clean energy as of 2021 (Figure 1). The percentage is quite high in the age of generation z

and millennials, therefore if they think about purchasing electric vehicles, Tesla is probably the best choice for people who concern about the environment and sustainability.

Fig 8. The willingness of customers from worldwide to pay more for clean energy as of 2021 (Source: Statista).



3.2.2 Threats

1) The Pandemic

The COVID-19 situation severely crippled the auto industry, and the disruption had its impact on demand for electric cars, electric two-wheelers and electric three-wheelers. New EV registrations declined by 20 percent, which means the pandemic affect the production process.

2) The self-driving regulation in some countries

This is somehow deal with personal safety and ethical decisions. Recently, there are only 25 countries that legally allow autonomous vehicles. In a country that does not allow for this regulation, the consumers might think that they cannot use all functions that a car has, and will affect their decision making.

3) The competitors

China is the largest EV market in the world where Tesla is currently the undisputed leader. Electric vehicle sales in the country surpassed the one million figures in 2020 and are forecast to touch 5 million by 2025, 10 million by 2030, and 20 million by 2040.

This might arise at an enviable rate given how the Chinese government supports domestic manufacturers. Moreover, Hyundai and Kia are pushing into the EV market aggressively with many more to come over the next few years. If those brands provide cheaper prices and focus on countries that do grant support from the government, this would be a big challenge for Tesla.

3.3 Summary of SWOT analysis

According to Tesla's strengths, the company obviously has the capacity to produce effective products by having those great partnerships and good leaders. Their products truly lead to what the potential customer expected, and this is the reason why they became a strong brand. This position will be enhanced by many advantages that the company can take from external factors. The government support provided to the EV buyers, more public charging stations, and increasing people's awareness on sustainability issues will somehow help Tesla to increase their sales. However, there are still some issues that Tesla needs to deal with. For the financial performance, for example, they might need to well manage this because it might affect the investors. Another big issue can be relying on Elon Musk, this may be solved by trying to promote as a brand instead of focusing on one person. Maintaining a premium position would not be a problem for Tesla because it is what the company wants to be, therefore, if the thing that they should improve is to find the way to make the profit as much as the R&D budget they spent. For the threats, the competition will not be a big problem for Tesla because their direct competitors are only high-end brands. Recently, there are only several models produced by the competitors and Tesla tends to more specialize in this product. The pandemic is what all car manufacturers and businesses need to face. The self-driving regulation also is a factor that the company cannot solve by themselves, and other car brands that come with this function also need to face this issue.

Table 1. The SWOT analysis elaborates on Tesla, Inc.

Strengths	Weaknesses
• Elon Musk • Brand and marketing power • Innovation • Strategic partnerships • Design of cars and customer experience	• One-man show • Numerous Manufacturing problems • Financial performance • Small target group
Opportunities	**Threats**
• Government Incentives for the electric automobiles • Increasing in EV charging infrastructure • Increasing in the clean energy preference	• The Covid-19 pandemic • The self-driving regulation in some countries • The competitors

Chapter 4 Three Levels of Strategy Analysis

4.1 Tesla's Corporate Level Strategy

Tesla's mission is to accelerate the world's transition to sustainable energy. The company's strategic business units are all involve with automotive and the solar energy. Since the company was established, they initially aim to produce the electric vehicles which is better, quicker, and more fun to drive than gasoline cars. Recently, the company not only produces the electric automobiles but also the energy generation and storage products with the belief that they are able to help this world to stop relying on fossil fuels and create a zero emission.

The company uses the growth strategy as their corporate strategy. The strategies that they used for a whole business is including market penetration strategy, product and market development strategy, concentric diversification strategy, and vertical growth strategy. These strategies are adapted with strategic business units and products that Tesla Inc, has. For the automotive segment, Tesla entered the market through expensive high-end cars targeted to the more financially privileged class of people at first. They penetrated their market by using an aggressive marketing which aims to rollout and sell more of its electric cars in the United States. They have adopted the product and market development strategies as well. In 2012, the Model S was launched as an electric luxury sedan and had become the world's best-selling plug-in electric car in 2015-2016 by expanding to Asia and Europe. Later, they expand their market to another target market. In order to respond more to their mission statement, the Model 3 had launched as a mid-range price point. This is Tesla's fourth vehicle and has been designed for the mass-market. Tesla Inc. also has used the vertical growth strategy to merge and acquire with related companies in their industry in order to be their suppliers. For example, DeepScale is a start-up business for autopilot development. Grohmann Engineering GmbH or Tesla Grohmann as manufactures and engineer production automation equipment for various industries.

Beside of the vehicles, the company also developed their sustainable energy production including a car charger and the battery storage for houses. A network of Super-chargers is established across North America, Asia, and Europe for the customers to charge their car for free. In this section, a concentric diversification strategy is also used as an integrative growth to adopt the company's mission. Tesla Inc. bought the SolarCity which is the biggest installer of residential solar panels in the US and the name was changed to Tesla Energy. This is subsidiary of Tesla Inc., for selling the solar roof product, the solar energy storage from home to grid scale, the solar panels, and installs photovoltaic solar energy generation systems. Recently, whereas the main

source of company's revenue comes from the vehicles, but their latest quarterly earnings report showed growth in its energy storage and solar business.

4.2 Tesla's Business Level Strategy

Tesla, Inc. has two main strategic business units which are independent from each other but symbiotic with technologies: 1) Tesla Automotive, 2) Energy Generation and Storage.

1) Automotive (94% of the 31 billion USD revenue and almost 100% of Tesla's Gross Profit, still growing)

Besides automotive sales, Tesla also offers services for holistic customer experience and solutions. The services include insurance, sales of used vehicles, non-warranty after-sales vehicles services, software updates and a charging network (e.g. Supercharger).

2) Energy Generation Storage (6% revenue of total revenue and a negligible amount of total gross profit)

So how does Tesla profit from its energy segment?

Simply said, Tesla automotive profits from the energy segment knowledge. They, for instance, use their energy solutions like solar panels for the super chargers.

The subsidiary Tesla Energy is responsible for the designs, manufacturing, installation, sales and leasing of solar energy products. The Energy storage include Powerwall 2 and Powerpack 2 and the solar energy systems panels, inverters, electrical hardware and monitoring devices. Tesla Energy's generation products include solar panels (built by other companies for Tesla), the Tesla Solar Roof (a solar shingle system) and the Tesla Solar Inverter. Other products include the Powerwall (a home energy storage device for solar energy) and the Powerpack.

Fig 9. SBU symbiosis: Some super charger stations at the West coast work with solar energy panels on the roof and its storage, provided by Tesla Energy.

4.2.1 Competitive Business Strategy

Out of the 4 business strategies (Focused) Cost Leadership and (Focused) Differentiation, Tesla uses Broad Differentiation to compete both, in the automobile and energy industry.

The current strategy is to develop unique car models with superior performance and technology and important customer benefits that set Tesla apart from other car manufacturers. Its car models are equipped with environmentally friendly technology, which makes them attractive to a broad and growing environmentally conscious market. Customers are willing to pay premium prices to get high quality products and enjoy a good reputation with the environmentally friendly cars.

Tesla's initial generic strategy was Targeted Differentiation, when they launched the electric sports car Roadster (price 128,500 USD) – the first one of its kind which disrupted the market - and premium Model S, based on Tesla's breakthrough EV technology. Tesla's goal is to differentiate its small product line by innovative technology and a luxury design. They first focused on early adopters and high-end customers who are not price-sensitive. Musk stated: "The strategy of Tesla is to enter at the high end of the market, where customers are prepared to pay a premium, and then drive down market as fast as possible to higher unit volume and lower prices with each successive model."

After the brand gained popularity, Tesla switched to broad-based differentiation. In this case, the company used its low production costs and reputation to produce cheaper products, such as the lower-cost Model 3 (35,000 USD), for the mass market. The strategic option directed towards the mass production of affordable cars is advantageous because it provides an opportunity for Tesla to increase its unit sales volume amid lowering the prices of its subsequent models and Tesla could undermine its competitiveness.

For the energy segment, for example the power differentiates through a more elegant and aesthetically appealing design than most existing home batteries systems, such as small diesel generators. It's easy to use, easy to install, relatively inexpensive to maintain and uses high-power batteries.

Solar systems are a great environmental trend and bring lots of potential. Entering the market for batteries for residential and commercial energy storage has clear advantages for Tesla. It allows Tesla to further leverage its knowledge and expertise in automotive batteries for electric vehicles.

In the long-term, Tesla might also focus on cost-reduction to keep competitive and sell even more models for the mass market. That's how they drive sustainability for everyone.

4.2.2 Sustainable Advantages & What is different to all the other automakers and energy provider?

Tesla would like to pursue a broad-based differentiation strategy and benefit from the associated economies of scale.

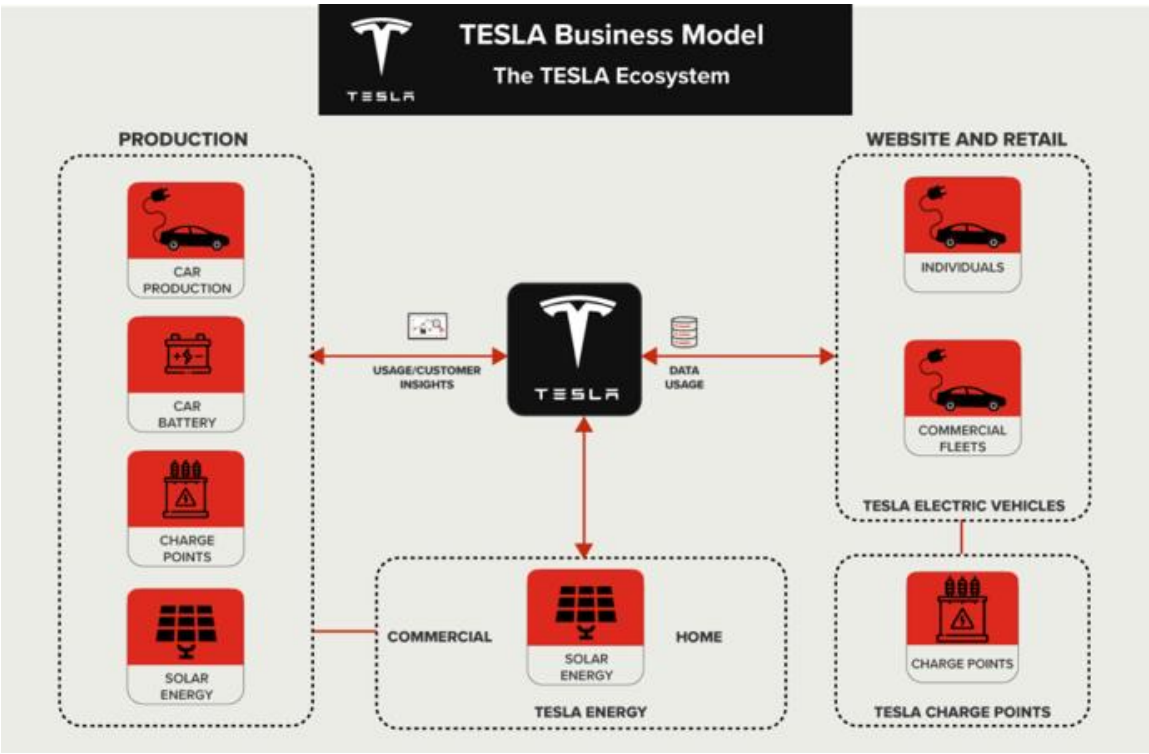
- Tesla sets a true focus on environmental sustainability and it's the core value of both SBUs. They want to reduce environmental impact and plan clean solar energy for charging their cars.
- Excellent R&D with ground-breaking technology: The design of Tesla's electric vehicles engines outperforms that of other competitors in the EV category of automobiles. They are also leading in high-powered battery technology ownership and software systems.
- Vertical integration of 80% which is quite rate in the automotive industry (most companies outsource most of the components to suppliers). Tesla produces many components by themselves and also build the proprietary stations for EV charging.

- Tesla allows competitors to license its technology (gets provision, copying the design directly is not allowed), stating that it wants to help its competitors accelerate the use of sustainable energy all around the world.

- The cost-effectiveness of Tesla's manufacturing approaches has boosted the company's competitive edge compared to its rivals. Notably, Tesla produces power units for its electric vehicles at a reasonable cost concerning the price incurred by rivals such as Nissan and BMW.

- Tesla directly sells vehicles through its website and a network of company-owned stores with showrooms, which are often located in shopping malls where it can reach many people first automaker in the US who sells cars directly to consumers.

Fig 10. Vertical integration of different components.



4.2.3 Customers

In general Tesla Inc. typical customers of both segments are quite similar: They sell in North America, Asia, Europe, mostly to males, but also to females, middle class and upper class, who have an environmentally friendly mindset and want long-term cost effectiveness.

- **Automotive Segment**

  - **Roadster, Model S**

High-end customers, sports car lovers, very high income

- **Model 3, Model Y**

  Mid-Mass market segment, high income level, company car leasing

- **Energy Segment**
  - **Energy storage (Powerwall, Powerpack)**

    25-65 years, high income level and commercial & industrial customers

  - **Solar energy systems**

    30-65 years, high income level, commercial & industrial customers

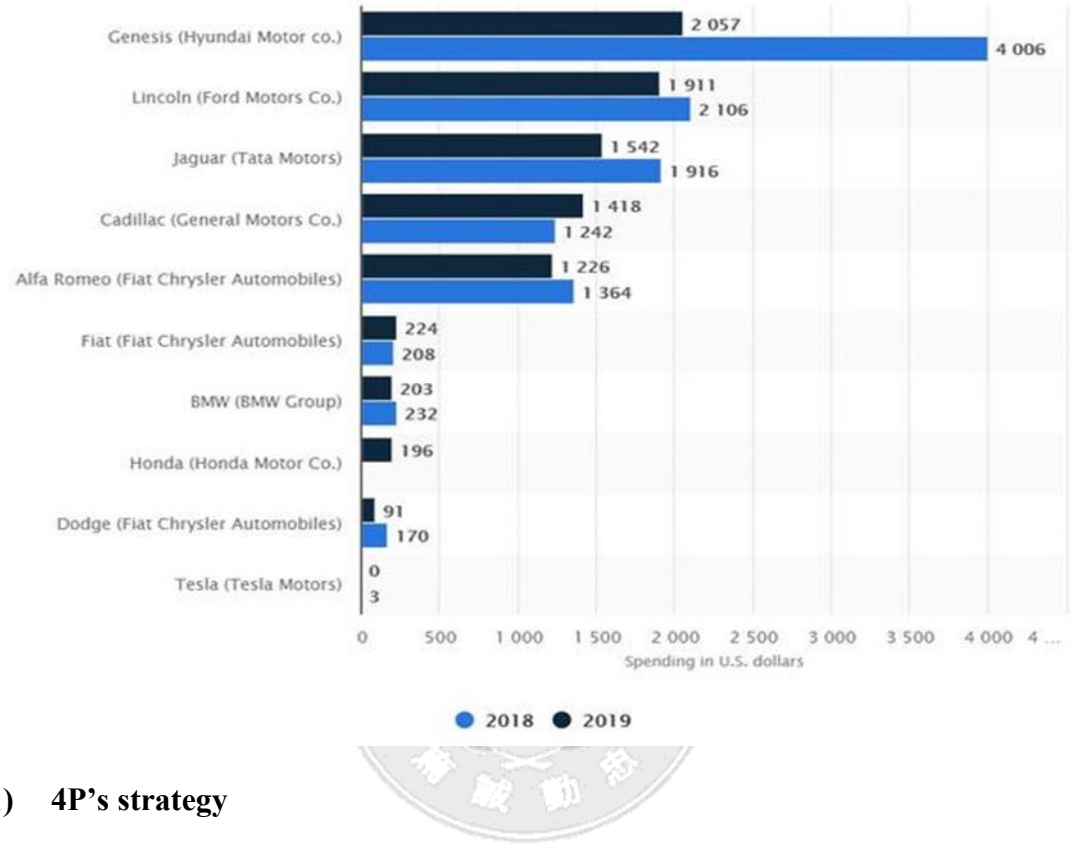
4.3 Tesla's Functional Level Strategy

The following functional level strategy will focus on the Tesla whole automotive business.

4.3.1 Marketing Strategy

Tesla started their path into the niche market of luxury car differentiator and is now driving down the market with a broad differentiator strategy. The company does not spend on advertising. Instead, the company relies on word of mouth from its users and fans. Elon Musk is a celebrity serial entrepreneur and billionaire who attracts huge amounts of media attention and has a substantial social media following e.g., 60.4M followers on Twitter.

Fig 11. Tesla advertising spend and competitors in 2019 (Source: Statista).



1) 4P's strategy

- **Product**

Tesla products are automobiles, electric vehicle components, batteries, energy storage, and solar panels. Tesla offers solar panel installation services and batteries for home and industry. In addition, Tesla is trying to add new products gradually as well. Now, Tesla is focusing on producing electric vehicles as they seek expansion as a multinational and global company because of its growing demand and innovation.

- **Place**

Tesla use the same locations to displays the products and services. Tesla products can be found mostly in company-owned stores, official company websites, company-owned service centers, charging stations and usually in some mall locations for easy public access. These places act as showrooms for Tesla to promote their products through car displays. Moreover, Tesla has its own service centers for repairing and maintaining their customer's cars. These reflect the company's selection of limited but strategic locations for its business. Tesla utilizes its media presence and website to offer their online purchasing experience, allowing for the customization and delivery of their

cars. Customers can check Tesla's automobiles, energy storage, solar panels, and related products at company-owned stores and galleries located in malls and other areas. However, customers need to use the company's website to complete sales transactions.

- **Promotion**

Tesla's promotion relies primarily on viral marketing but it also utilizes personal selling, public relations, sales promotion, and direct marketing. Viral marketing has the biggest contribution in the company's promotional communication with target customers. For example, the release of the Tesla Model S for Kids is largely promoted through viral videos on social media. In addition, Tesla uses public relations by building the customer's perceptions acknowledgment by making its patents an open-source as a movement to support sustainable energy and boost its popularity. For example, the company's inclusion of its patents in the open-source movement is testament to the company's commitment to driving the world's transition to sustainable energy. Such event would help to improve the customers' perception about Tesla. Sales promotions involve discounts for certain items and the company's customer referral program and sometimes Tesla uses direct marketing such as selling powertrain components and batteries to other businesses.

- **Price**

Now Tesla is using premium pricing strategy and market-oriented strategy. In premium pricing strategy, it involves high price based on the uniqueness and or high value added in the products. For example, customer who use Tesla cars will be considered as advanced in terms of technology and ecology. Premium pricing makes use of high price points upon which customers value high performing technologies that cannot be found in any other products out in the market. Nevertheless, Tesla also uses market-oriented pricing strategy for its solar panels and related products (services) through the subsidiary SolarCity. Finally, All of their transactions are only done online which is unique to other car companies and this is also a strategy to lower the selling cost.

2) Distribution Channels, Intermediaries, Relationships

Now Tesla is focusing on entering the international market. They open more locations, expand more promotions and develop new products to attract the customers. Tesla is currently forming new relations with other companies to expand their business ventures. For the moment, Tesla avoids using intermediaries and concentrating in doing direct business with the customers to optimize their services and cost. As a result, they

will have full control of their product contribution channels, which are online website and stores.

4.3.2 Research and Development Strategy

Overall, Tesla has increased its investment in R&D over the past two years. However, with its huge investment in R&D, Tesla still posted a loss through 2015. Tesla is playing the long game with R&D, focusing on Automation, Materials Cost and Software updates. Their massive spending in long-term research and development distinguishes them from the motor vehicle market. However, many other companies are also using electric vehicles, and Tesla wants to maintain a competitive advantage by making their products difficult to imitate. The heavy spending on R&D is aimed at developing more sophisticated technology for their products, increasing barriers to entry into the electric vehicle and battery markets. The significantly higher amount of investment in R&D compared to other companies in the market granted Tesla the position of being the innovator and the leader of the market, which keeps Tesla in the niche position of having a sustainable competitive advantage in the market of electric motor vehicles.

Heavy spending allows Tesla to continue to update its Neural Networks and AI algorithms, enhancing Tesla's autonomous driving capabilities, setting itself apart from the current auto market. Research in Automation and Customization has become a vehicle for them to enter the automotive arena, reducing costs and enhancing Tesla's position as the leading seller of electric vehicles. Lithium batteries are also an area of innovation for Tesla. Software updates have caused an increase in battery performance, but battery hardware technology is arising from Tesla’s R&D spending, allowing for more range out of their niched, electric engines.

Fig 12. Tesla’s R&D spending and losses made from 2010 to 2015 (Source: Statista).

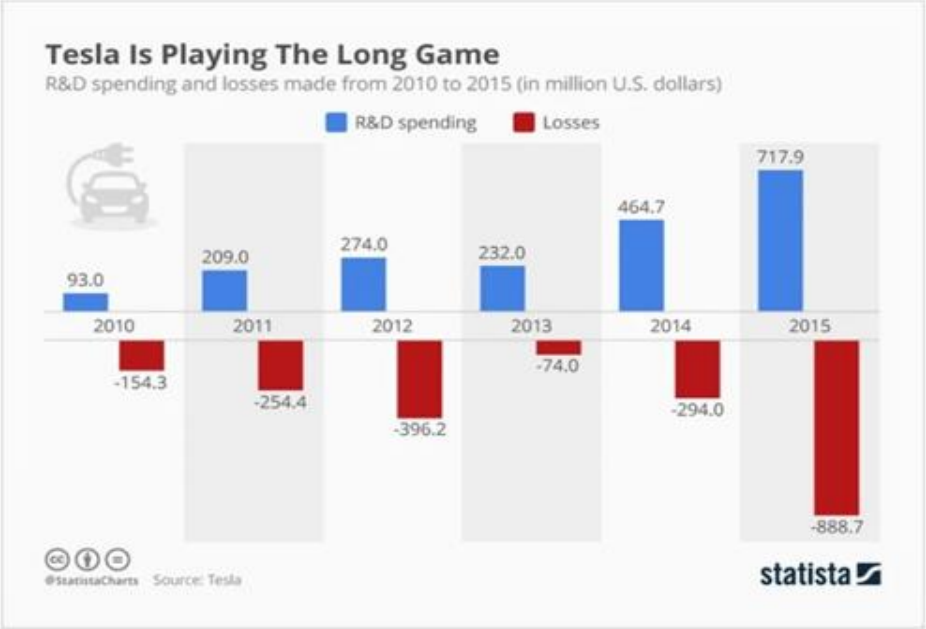


Fig 13. Tesla's R&D intensity and selected car manufacturers in 2015 (Source: Statista).

4.3.3 Finance Strategy

Certainly, Tesla's most important revenue stream was and remains the sale of electric cars, representing more than 80% of its revenue – estimated at more than 20 billion dollars.

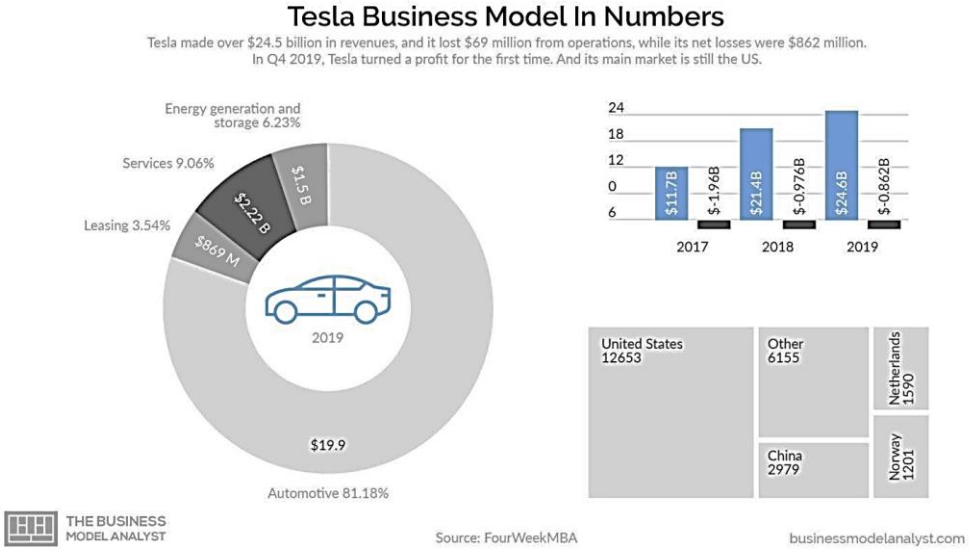
Tesla has four main sources of income:

- Automotive
- Automotive leasing
- Services and other
- Energy generation and storage

The other 20% of income includes automotive services and vehicle leasing, but also sales of solar energy systems and storage products (about $ 1.5 billion in Q4 2019).

For the customers, Tesla also provides financial options for the customers' vehicle. The Tesla financing calculator is available to help estimate the payments for purchasing and leasing vehicles. The options include Available Payment Methods, Credit Application and Delivery. Moreover, Tesla provides Tesla Lending to offer the ability to purchase vehicles over time by securing a loan with either a third-party lender or a Tesla financier. For Tesla car user, Tesla provides Insurance packages for its customers. For the moment, this program is available for drivers in California but it would come to other U.S. states in the near future. According to Tesla, they have a better understanding of how their vehicles operate and how drivers use them, hence they can charge more suitable insurance premiums for Tesla customers.

Fig 14. Tesla sales breakdown in Q4, 2019.

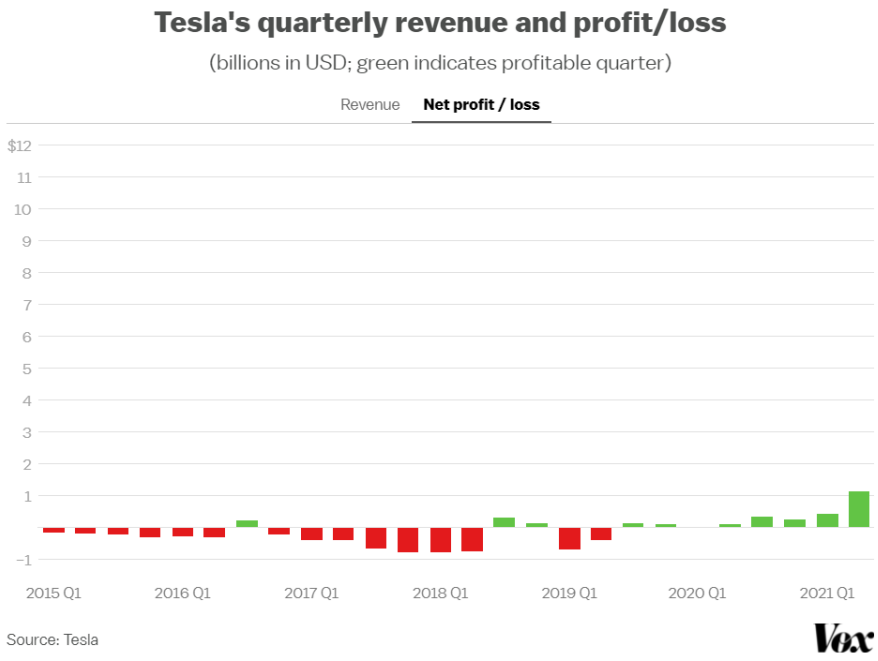


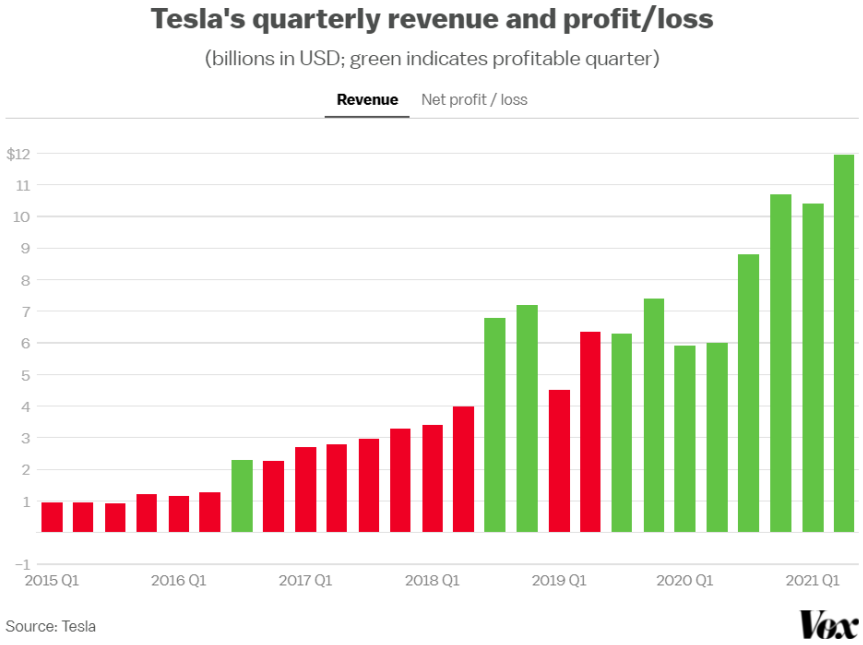
Recently, from the third quarter of 2019, Tesla finally profited from its sales after suffering a long period of losses from 2015. Tesla sold enough automobiles and energy products to turn a profit even without counting the sale of emissions credits to other

automakers — which is considered as a milestone for the company. This was the eighth profitable quarter in a row for Tesla, but the first where it can truly say it is a profitable automaker.

Tesla logged a $1.1 billion profit in the second quarter of 2021, with $354 million of that coming from credit sales. The rest came from automotive sales, as well as a boost in energy storage sales. In spite of taking a loss of $23 million on its big Bitcoin bet, Tesla generated $11.9 billion in revenue in the quarter.

Fig 15. Tesla's quarterly revenue and profit/losses from Q1,2015 to Q2,2021





4.3.4 Production Strategy

Most of the Tesla vehicles are produced at its factory in Fremont, California, where the vast majority of the vehicle's components are also made. Tesla produces its own key components of each automobile, including the electric motor, the battery pack, the charger, etc. When people think of the Tesla assembly line, the word "automation" often comes to mind. Nowadays, over 75 percent of Tesla's production line is automated. "Automating intelligently" is probably a more accurate term to describe Tesla's automotive assembly, as a combination of artificial intelligence and automation has marked the way that Tesla manufacturing is done. Intelligent automation has supported Tesla to transcend conventional performance, achieve unprecedented levels of efficiency and maintain stable quality in their products.

Apart from its Fremont headquarters, Tesla also manufactures its lithium-ion battery and electric vehicle components at Tesla Giga Nevada (also known as Gigafactory 1) in Storey County, Nevada, a supporting plant designed to reduce battery cell costs. The Tesla Gigafactory was born out of necessity and will supply enough batteries to support Tesla's projected vehicle demand. Today, the Gigafactory produces Model 3 electric motors and battery packs, in addition to Tesla's energy storage products, Powerwall and Powerpack. Moreover, Japan's leading electronics corporation, Panasonic Corp., has reached an agreement with Tesla to invest at the Gigafactory 1 in Nevada since 2014. Panasonic agreed to lead the lithium-ion battery cell production and supply portion of the manufacturing. Under such cooperation,

Panasonic officials stated that the capacity for battery production is likely to increase as Tesla's annual production capacity is set to surpass 1 million vehicles by 2021.

As Tesla continues to deliver more and more vehicles to customers globally, they have planned to build the plants overseas. Tesla Giga Shanghai (also known as Gigafactory 3) was built in Shanghai, China. This facility currently hosts the final assembly of the Tesla Model 3 and Tesla Model Y, with Model Y deliveries starting from January 2021.

Furthermore, Tesla keeps expanding their production business up to Gigafactory 4 and 5. Tesla Giga Berlin (also known as Gigafactory 4) is a European manufacturing plant for Tesla, Inc. under construction in Grünheide, Germany. The factory has planned to produce batteries, battery packs and powertrains for use in Tesla vehicles, and also assemble the Tesla Model Y, with a proposed start of production in late 2021. The construction work had begun by early 2020 with site preparation and foundation work underway. The other is Tesla Giga Texas (also Gigafactory 5), an automotive manufacturing facility near Austin, Texas, under construction by Tesla, Inc. since July 2020. The Texas factory is planned to be the main facility for the Tesla Cybertruck and the Tesla Semi. It will also produce Model 3 and Model Y cars for the Eastern United States. Tesla aims to have the first production before the end of 2021 and mass produce in 2022.

4.3.5 Human Resources Strategy

According to Tesla's career page, its main mission is "to accelerate the world's transition to sustainable energy" by hiring the world's best and brightest people that share the same passions in changing the world and are willing to work in their fast-paced and innovative firm culture. Tesla's strategy is to keep innovating continuous solutions and support continuous improvements by maintaining human resource capabilities to increase growth in the global market of electric cars.

By achieving these goals, Tesla instills an innovative problem-solving organizational culture. First, this style of corporate culture encourages employees to develop profitable solutions to current and emerging problems in the target market. For example, the company employs its organizational culture in developing advanced electric vehicles as a solution to environmental issues surrounding automobiles that have internal combustion engines. The company's ability to keep introducing advanced

electric vehicles reflects the benefits of its corporate culture. Also, this organizational culture keeps employees to be creative and innovative to improve their technological capabilities in which employees are rewarded and compensated. Tesla focuses on encouraging innovation that leads to useful products for the global market. The company's progress and growth are based on technological innovation. Tesla's organizational culture has remained focused on such innovation since the founding of the business.

In addition, Tesla aims to expand its market worldwide by establishing new offices and facilities upon which as part of its strategy of being a global leader in the automotive industry. On their career page, they also state with aiming to solve the world's problems by hiring talented individuals worldwide and building an inclusive environment. This is their human resources strategy for production efficiency to push their company into the global market, by opening offices and hiring employees from around the world rather than just relying on their local bases.

4.3.6 Sales Strategy

Unlike other car manufacturers who operate or sell through franchised dealerships, Tesla chooses direct sales, which is the only automaker selling directly to consumers through its own stores, and the only approach to buying a Tesla is online.

In many ways, Tesla is still trying to figure out what is the best approach for sales strategy. Originally in 2018, Tesla focused on having stores and galleries in attractive urban locations or high-quality shopping mall centers, considering that it would be easier to introduce customers to a new brand in areas. A year later in 2019, Tesla changed their mind to get rid of showrooms in urban locations and instead focus on cheaper locations and delivery centers. Tesla announced to shift most of its sales to online to grow market share without some of the physical showrooms. The money that Tesla saves with the high rents is to be invested in the expansion of the service center network.

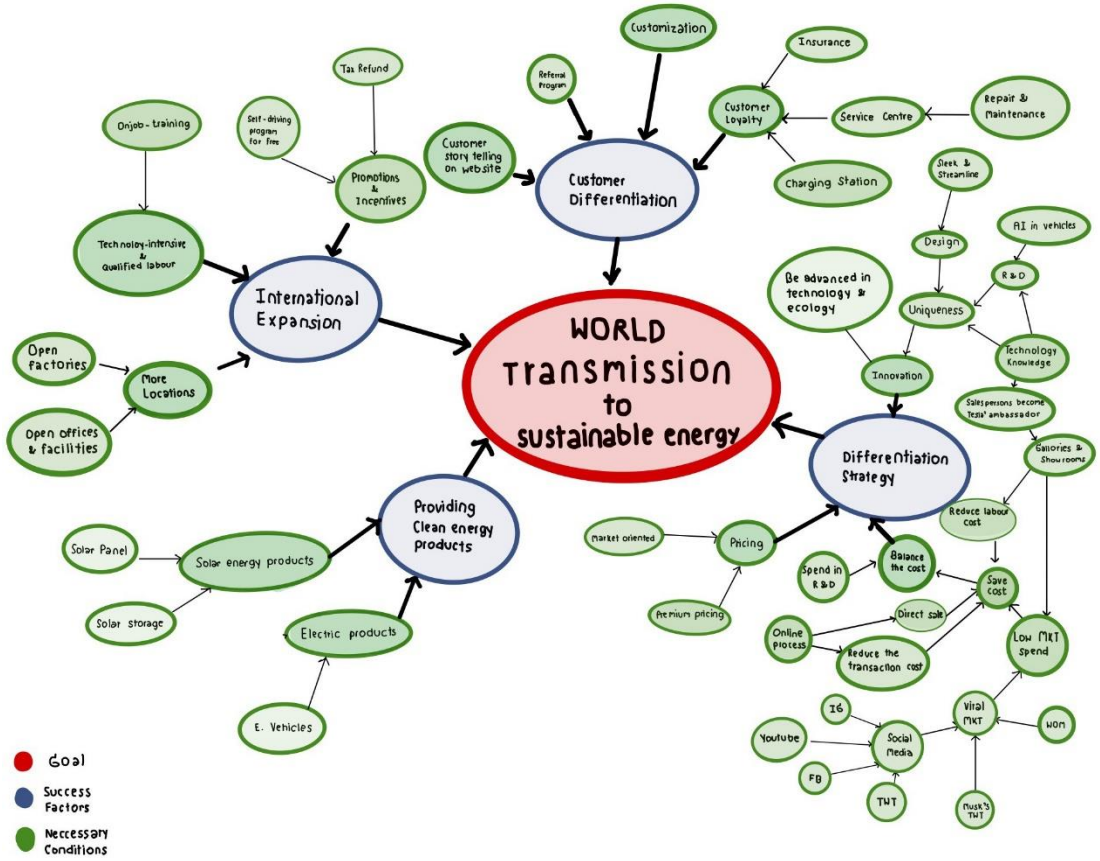
Besides, Tesla doesn't employ salespeople in their galleries. Instead, they turn salespeople into brand ambassadors, also known as Tesla Product Specialists, who focus on educating future owners about Tesla and electric vehicle ownership. Although customers are unable to purchase a vehicle in a gallery, and test drives are not always available, those interested can learn about Tesla and then place their order online. Up to now, Tesla has already made use of Internet sales where consumers can customize and purchase a Tesla online.

Regardless, one of the reasons Tesla has been able to sell cars at a higher margin than the other car manufacturers is that Tesla runs both manufacturing and sales themselves, which allows them to maintain the margins from both sides of the equation on their own balance sheet, instead of distributors taking half of the profit. In this way, Tesla’s sales team is more manageable and trimmer than the other car competitors are. Also, Tesla set up their sales teams to be partners with their buyers rather than opponents.

Chapter 5 Strategic Map Analysis

In this section, we report the Strategic Map in Figure 16, which elaborates on Tesla, Inc., by separating the success factors into 4 parts, including: 1) Providing Clean Energy Products, 2) International Expansion, 3) Customer Differentiation, 4) Differentiation Strategy.

Fig 16. The strategic map elaborates on Tesla, Inc.

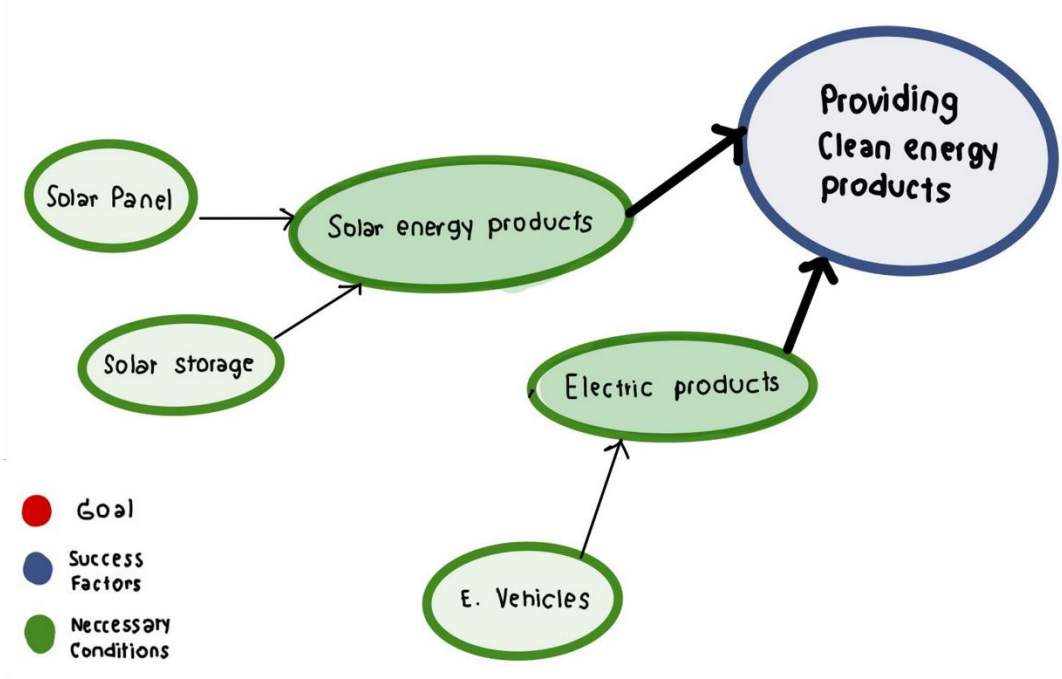


5.1 Providing Clean Energy Products

A shift in consciousness is taking place across the world as various societal structures prompt people to think about the approaches that each of us can make a difference. Environmental awareness is growing nowadays. Customers' tastes and preferences are changing at the same time. When it comes to the reduction of CO2 emission, using electric vehicles (EVs) is bringing much attention as a countermeasure for global warming. The electric vehicle revolution investigates technical innovation driven by environmental awareness. Vehicle drivers to these behavioral changes can also be linked to technological innovation.

With the world towards a sustainable energy future, Tesla took a unique approach to establish itself in providing clean energy products in the automobile manufacturing market. Instead of what other car manufacturers did, Tesla took the opposite way, focusing on creating an attractive car that satisfy the demand with "electric vehicles". Moreover, today, Tesla produces not only all-electric vehicles but also solar energy products, including solar panels and solar storage products. Tesla believes that the faster the world stops relying on fossil fuels and moves towards a zero-emission sustainable future, the better they provide clean energy products.

Fig 17. The Providing Clean Energy Products factor from Tesla's strategic map.



5.2 International Expansion

According to Tesla's company goal, Tesla aims to reduce fossil fuel usage and has the big vision to create zero emissions in transportation all over the world. The company entered the market in the United States and has expanded to many countries. The first move was to sell their first model S in Asia and the European market. Tesla's electric vehicles became the best-selling electric cars in 2015-2016, this guaranteed that the company is on the right track. Outside the US-market, the company built their GigaFactories in Germany and Shanghai, which are the representatives of European and Asian automotive markets. With this way the people who are not in the United States will have more choice considering an electric vehicle, especially in Europe where

people are very concerned about the environment. Tesla's factory in Shanghai is considered as an export hub as it also sells in China where there is a high demand for Tesla cars. Recently, Tesla has 438 stores around the globe (160 for in the United States alone), and the official charging stations are around 14,000 locations, which is a high number. As pioneers they saved the best spots in the competition about charging locations.

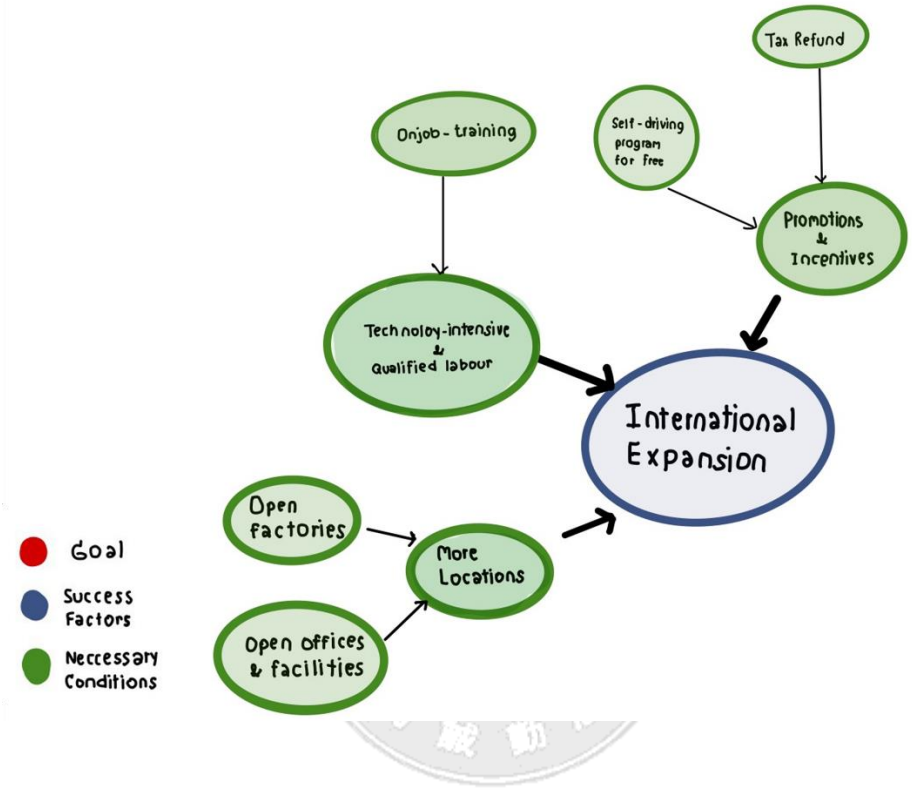
In order to attract more customers to use clean energy, Elon Musk tweeted in December 2020 that Tesla will provide 3 months of the full autopilot for their customers for free. They also tried to ramp up sales through promoting that every customer at the end of 2020 gets a year of free supercharging to new Model 3 and Y buyers.

Furthermore, the company's website provides detailed information about the tax incentives some governments like Germany and UK give buyers of electric cars. The information is displayed in detail to attract even more customers.

As the public knows that Tesla is a technology company, the company also maintains this competitive advantage and manages their people for their market expansion plan. The company wants to hire talented people worldwide, especially engineers, in order to be part of their innovative technology development. Tesla provides talent programs for individuals who are interested in the company's career. The candidates will get e.g. EV service training programs which are necessary for them to be successful in the company. Those people might accept employment from Tesla by joining this program.

The procedures and the strategies that Tesla is doing fit for helping to make the world a better place with sustainable energy. By expanding to many markets, the more electric cars people use, the more emission can be reduced. The promotion and information that Tesla tries to provide for their potential customers, can also lead to higher purchase intention in the future. The company also has the potential and supportive employees to drive the business expansion even further. Tesla's international expansion strategy leads the company towards Tesla's goal.

Fig 18. The International Expansion factor from Tesla's strategic map.



5.3 Customer Differentiation

With giving customer differentiation among other car manufacturers, Tesla does try the approaches to reach their business goal, including the following four ideas. The first and the most important one, they try to enhance customer loyalty in customers' minds and behaviors. As Tesla car owners, they must charge their vehicles at Tesla's charging stations while running out of battery. With some car problems happening in Tesla, Tesla's service centers are their best choice and could directly assist drivers in both repair and maintenance issues. In addition, Tesla has launched the Tesla Insurance for customers. Tesla Insurance offers comprehensive coverage and claims management to support customers. Tesla Insurance is able to leverage the advanced technology, safety, and serviceability of cars to provide insurance at a lower cost. This insurance pricing reflects the benefits of Tesla's active safety and advanced driver assistance features that come standard on all new Tesla vehicles for customer doing monthly payment.

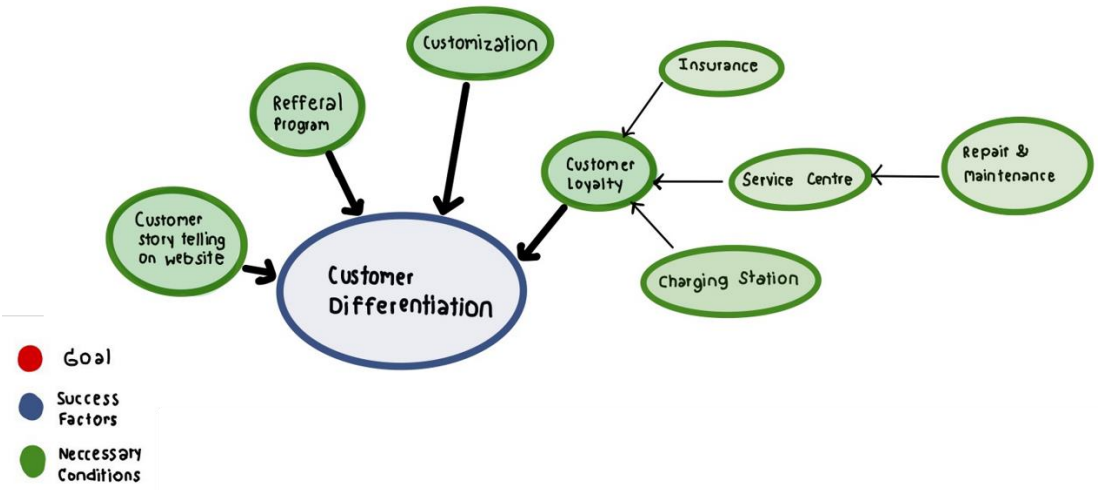
Next, customers could do for the customization with their cars. Before customers clinch a deal with Tesla, they are able to design their merchandises, including car paint, wheels style, car interiors color, seating layout, full Self-Driving capability, and so on.

The third approach, it is the Referral Program from Tesla. Tesla's goal is to build the best clean energy products and help the owners share their excitement and experiences with others. As Tesla owners, they can earn awards when their friends and family use their referral link to order eligible Tesla products and transition to sustainable energy. In brief, this program was a kind of promotion to boost sales. It awarded referrers and referred customers with free Supercharging miles and chances to win EVs.

Lastly, with getting more relationship with customers and owners, Tesla shares stories from product owners, called Customer Stories, which have posted and updated on their official website. Customer Stories are the approach by hearing first-hand from customers all over the world about their experiences with Tesla vehicles and energy products.

In conclusion, with these four current concepts of ideas by doing customer differentiation, Tesla must have confidence in accomplishing its goal of the sustainable business.

Fig 19. The Customer Differentiation factor from Tesla's strategic map.



5.4 Differentiation Strategy

To let more and more people know the benefits of using clean and sustainable energy products, Tesla obtains differentiation strategy to create differences between its products compared to other brands'. Tesla wants to make sustainability attainable for

everyone and drive it around the world. To achieve this, they are contributing with their electric cars and energy segment. Customers who drive electric cars and use solar energy reduce greenhouse gas emissions. So that many people want to use Tesla's electric car, they need to stand out from the big competition in the car market through innovation. To achieve the goal, Tesla uses many different strategies. Firstly, using differentiation strategy means making Tesla's products unique and cannot be imitated by other competitors. Tesla is advanced in technology and sustainability, which drives innovation. Tesla is also unique in their design: not only from the outside with their sleek and streamlined remarkable car shapes and gimmicks like karaoke and dog mode, but also with the design of their efficient engines. They had one of the best battery ranges in 2019 with up to 650 km. The R&D and production of its outstanding batteries and engines are produced in-house. With the many special AI components that continuously collect and transform data, e.g. for the autopilot, it is also possible through research and development to invent & produce more unique technology. The autopilot reduces the overall workload as a driver. The breadth of knowledge in solar energy can also be applied to the automotive sector. Tesla knows how to generate and store energy, for example, Tesla uses its own solar cells for its charging stations (Superchargers) and aims to power every charging station in the U.S. with clean solar energy.

Furthermore, Tesla's marketing strategy is also special compared to other brands. Similar to Apple, Tesla chose the premium-pricing strategy for its EVs. Because creating products that are unique and different based on technology skills and innovations, Tesla cars have rather higher prices than other car manufacturers. Premium pricing is to let Tesla cars be considered advanced in terms of technology and sustainability. It's also a marketing strategy of Tesla, to build a brand image in the customers' perception. In the future, Tesla wants to provide even more cars for the mass market (e.g. as Model 3) and wants to sell some of their models even cheaper so more and more people can afford an electric car in order to reduce CO2-emissions.

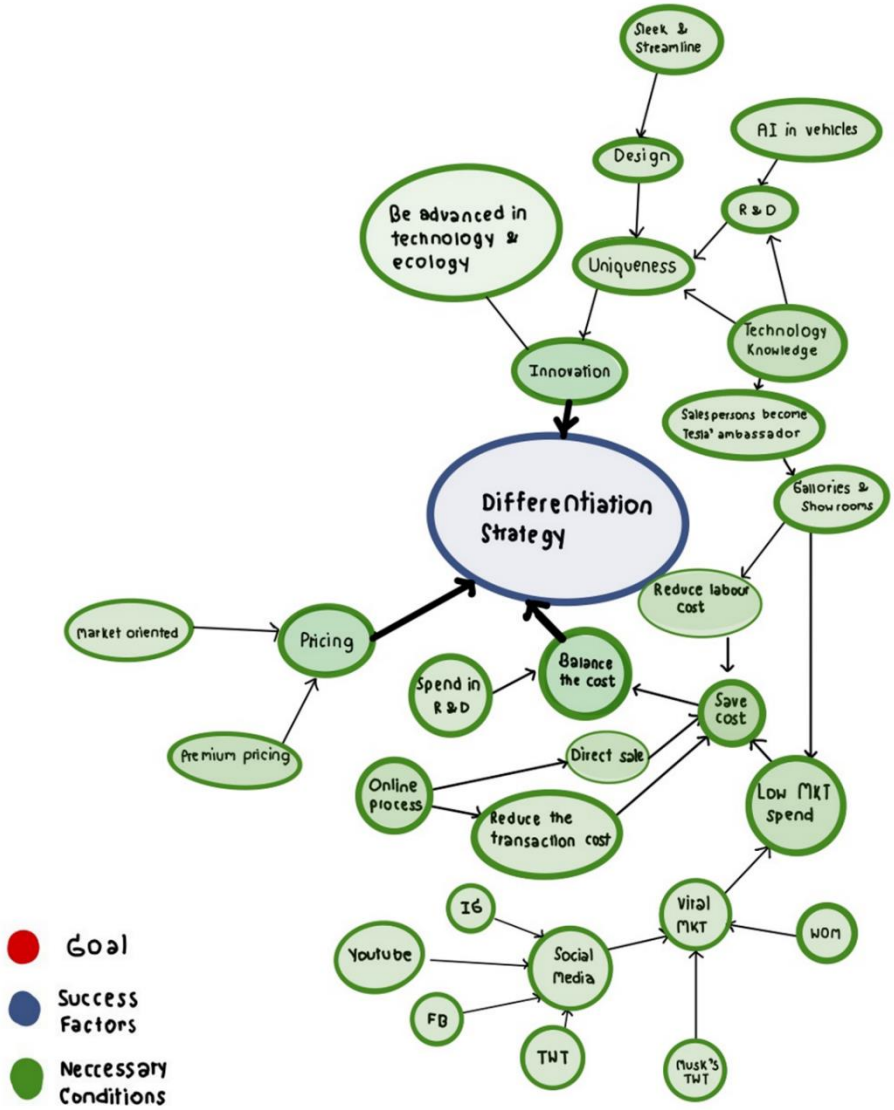
The other pricing strategy of Tesla is market-oriented. This strategy is used for Tesla solar panels, energy storage and batteries in order to let more people and businesses can approach these products. Because Tesla needs to innovate and improve their technology, they have to spend a lot in Research and Development activities. In 2020 they spent around 1.5 billion USD. But the investments in the last years made Tesla the leading electric vehicle manufacturer. As for that Tesla also needs to balance their costs. They save costs to spend more on R&D by using automation to improve and standardized products' quality and efficiency. Moreover, they reduce the labor cost by using automated machines for standardized work and Industry 4.0 technologies. On top they instruct their sales persons to Tesla's ambassadors to offer an exclusive service to

potential customers who want to know more about the products; they also use galleries, events, and company official service centers to exhibit Tesla cars. Finally, they lower their transaction cost by direct sales to customers by using only their official website, avoiding costs for car dealership provisions.

Tesla is one of few car companies that does not spend much on marketing strategies like TV and print advertisements. Suitable for the target group, Tesla's marketing mostly relies on viral marketing, in which Teala's products go viral through (electronic) word-of-mouth by Tesla users and fans in many different social media platforms like YouTube, Facebook, Instagram, Twitter etc. Moreover, Elon Musk is a celebrity entrepreneur and business magnate with more than 60 million followers on Twitter. Whatever Elon Musk posts on his Twitter can influence a lot of people and even the stock market. This is one of the marketing strategies Tesla uses to promote the spread of clean and sustainable energy to people around the world.

Tesla, with its innovation and uniqueness, sets an incentive for many customers to buy an electric car. Therefore, Tesla is clearly achieving its goal of driving sustainability.

Fig 20. The Differentiation Strategy factor from Tesla's strategic map.


Sleek & Streamline
Design
AI in vehicles
R&D
Be advanced in technology & ecology
Uniqueness
Technology Knowledge
Innovation
Salespersons become Tesla' ambassador
Galleries & Show rooms
Differentiation Strategy
Reduce labour cost
Market oriented
Pricing
Balance the cost
Spend in R&D
Save cost
Premium pricing
Direct sale
Online process
Low MKT spend
Reduce the transaction cost
IG
Viral MKT
WOM
Youtube
Social Media
FB
TWT
Musk's TWT
Goal
Success Factors
Neccessary Conditions

Chapter 6 Porter's Five Forces Analysis

6.1 Bargaining Power of Suppliers - Moderate-low force

On the one hand, for Tesla it is really important to ensure a smooth process in the production of its cars. A car is made of many components, like windshields, seats etc. which they get from key suppliers like AGC Automotive and Fisher Dynamics. For this reason, the negotiating position of suppliers is still very important for Tesla Motors. Supplier could threaten companies with rising product prices.

At the other hand, the level of supply affects Tesla only to a limited degree. Tesla is a vertically integrated producer. The bargaining power of suppliers is rather low, as companies in the electric car segment rely mainly on their technological capabilities and innovations. Most of the Tesla car consists of the batteries and the motor, which are manufactured by the company itself and with a strategic cooperation with Panasonic in the Gigafactories, which reduces the dependence on suppliers. Tesla's vertical integration is outstanding from other car manufacturers. It also wants to extract raw materials such as nickel and lithium itself from mines in the USA for its batteries.

From the suppliers' perspective, there are very few buyers for their products because the number of electric car manufacturers is rather small. The products are not significantly differentiated and can be produced by many suppliers, so there is competition among suppliers which depresses the prices. Therefore, Tesla would have low cost of switching most of their suppliers. In addition, most of these suppliers are moderately sized, thereby having limited influence on the automotive industry environment.

For the models which are made for the mass market, the company can ask for larger high-volume orders. Tesla achieved its target to produce 237.000 in the third quarter, that's helped Tesla to increase the interest of suppliers to work with them.

Both factors contribute to the bargaining power of the supplier companies, which leads to low to moderate bargaining power for the suppliers. This makes the electric vehicle industry quite attractive for Tesla.

6.2 Bargaining Power of Buyers - Moderate-low force

For the bargaining power of buyers, we consider this force as moderate to low. First, the switching cost for the customers to change into another electric car is high because there are many electric car manufacturers – specifically – and normal car

options – in general – in the market. As for that, the force the buyers put on Tesla is high. However, if we take considerations into the number of customers who would like to purchase for a Tesla electric car and the number of Tesla loyal customers. This force becomes low since Tesla has established a large base of customers and tried to make them become loyal customers though many services – which makes the customer difficult to find other alternatives, hence increase the switching costs. Tesla has been the leader in brand loyalty in automotive industry for many years.

Moreover, the customers almost have no abilities to negotiate on the price because Tesla cars are highly innovated with latest technology that may not be found in other manufacturers. The act of Tesla to keep innovating and producing new products is also reduce the defection of existing customers of Tesla to its competitors. Tesla claimed to produce more vehicles with more affordable prices to aim at the mass market.

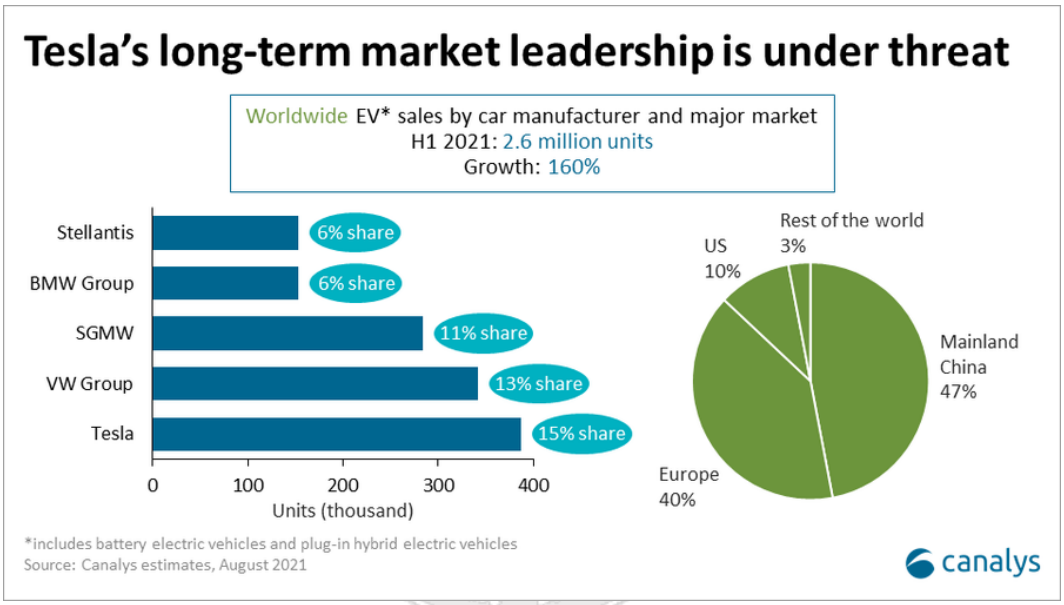
Tesla has reached the topping expectations to deliver 241,300 vehicles in the third quarter of 2021 and produced 237,823 vehicles in the end of September, 2021. Around 96% of them are Model 3 and Model Y which are more affordable mid-range offerings. As a consequence, we expect this bargaining power will remain low in the near future.

6.3 Competitive Rivalry in the Electric Vehicle Industry - Moderate-high force

For the electric vehicle market, the competition is in moderate to high level because of several reasons. First of all, it would be moderate because there are only few firms that should be compared with Tesla. If vehicle class is used for classified, Tesla's competitors would be only Audi, BMW, Mercedes, and Porsche in a few models. Second of all, it would be high because there is more and more demand of consumer in this EV industry. Some companies in this EV big market like China have considered this factor to develop their own brands and compete. Recently, the company is in very competitive market. Tesla is holding a 15% global market share of the EV market for worldwide, followed by Volkswagen (13%), SAIC Motors or SGMW (11%), Stellantis (6%) and BMW (6%), respectively. The Top 5 brand total amount is 1,616,290 (51.7% share) and for others is 1,508,503 (48.3% share). The two leading market would be China and Europe with 1.1 million EVs were sold in China and 1 million in Europe for the first quarter of 2021. In the United States, Auto industry titans like Volkswagen, Ford, and General Motors are betting big on a future dominated by battery-powered cars, and they're plunging billions into efforts to electrify. Audi's share of EV registrations grew to 3.3%, Ford's grew to 5.2%, and Chevrolet's increased 1.3% to hit 9.6%, according to Experian. Nissan's share rose to 3.9%. In additional, as known that the charging station and electric vehicles always go together. In the past, potential

customer might consider Tesla because there are over 2,564 supercharger stations worldwide, and 1,101 stations in North America. In the U.S. market currently, under President Biden's administration, the government invests a $2 trillion infrastructure bill for the charging stations for electric vehicles for any brand. This would be the opportunity for Tesla's competitors to develop their electric cars without concerning about this issue.

Fig 21. Tesla's long-term market leadership is under threat.



6.4 Threat of New Entrants - Low force

The electric car industry is considered as a new industry with a lot of challenges. There is high barrier for entering this industry because it required a lot on technology knowledge, the budget for investment, and many huge competitors are existed. In part of production, the specialization is very important for the car's mechanism and their components. This technology knowledge can help the company to differentiate their products. To date, 196 patents held by Tesla have been identified from another 26 countries, apart from the US. The largest number of these patents (30) were granted in France. Patents were also held in the United Kingdom (29), Belgium (27), Germany (21), Italy (19) and Austria (15) with other countries granting between one and seven patents. Thus, Tesla held a total of at least 308 patents from 27 different countries on five continents. This is huge amount of investment to guarantee that their development cannot be imitated. New entrants would require significant upfront financing in order to produce vehicle, not only for their own unique selling point, but also for the effectively and efficiency product.

For the economies of scale, the automotive industry is obviously reached the economies of scale, and for the electric vehicle industry is the same. The fix cost such as testing prototypes, the transportation cost, electricity, rental, the overhead cost that the company need to pay for once can be reduced by producing more and more units. This means the more the company produces there is lower cost per unit. However, achieving economies of scale is difficult for small and new players because at the initial stage, a huge investment will be required to set up the manufacturing facilities, distribution network and for hiring skilled staff.

The manufacturers in electric vehicle industry are all big size such as Tesla, Volkswagen, BMW, Audi, Porsche, Chevrolet, and so on. Some of them existed in the automobile industry previously, some of them are well-known in terms of their characteristics including price or quality. Those brands will have more power in the market if they would compete with new entrants. Tesla for example, the company has a potential enough to get the support from government in many countries. In Germany, the German government is finalizing a subsidy package that could give them over $1 billion in government funding for its new battery factory at Gigafactory Berlin. In the States, Tesla has benefited from government programs meant to stimulate demand for electric vehicles and help companies adopt green technologies. For example, consumers cashed in on $7,500 in federal tax credits for the first 200,000 vehicles Tesla sold in the country, an option that was quickly exhausted as consumers took around $10,000 worth of combined total incentives in California. Without the cooperation from the government, it could be very difficult for newcomers to beat.

6.5 Threats of Substitutes - High-moderate force

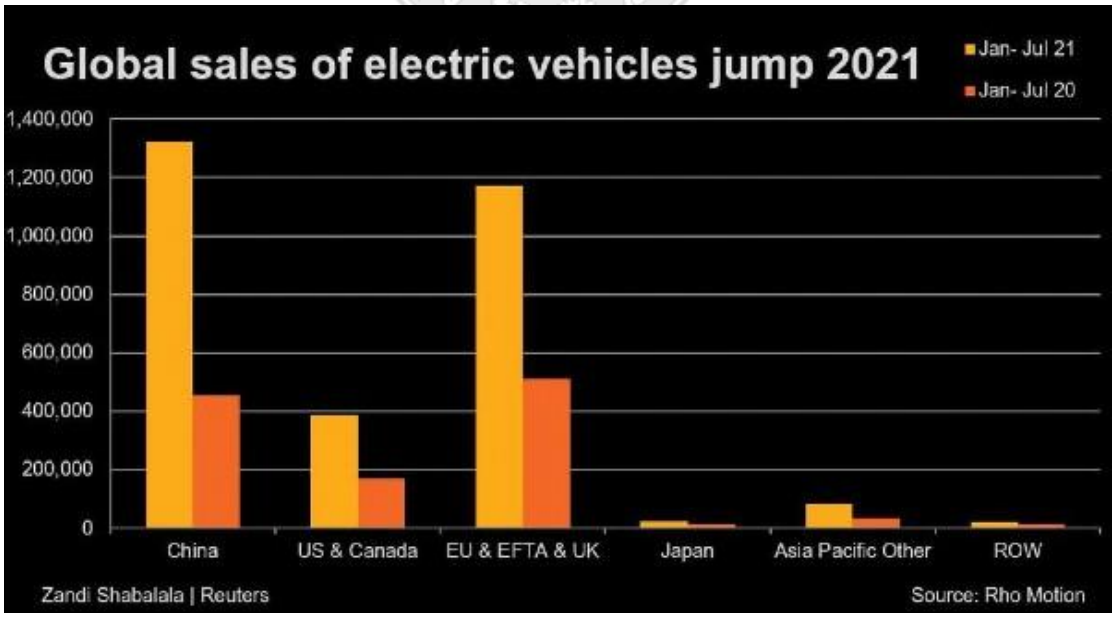
The threats of substitute for Tesla is high to medium as the customers have many options and the switching costs is very low. The customers can consider buying cars from other car manufacturers and the cost difference is not crucial. The biggest threat of substitute to a vehicle that uses clean energy are the currently largely used gasoline and fossil fuel vehicles. These substitutions arise because the cost of producing clean energy cars, not to mention electric cars, is quite expensive, so to make a profit for the company, they obviously have to charge a higher price. Then the choice of affordable hybrid cars is also a threat to EV industry. Apart from that, one other kind of clean energy that can be EV's substitute is hydrogen cars. In the moment, there are two car models that use hydrogen energy and they are already available in the market. This can be a threat for EV industry in the future.

Other substitutes include different modes of transportation. Motorbikes, bicycles, buses, trains , are all substitutes of EV cars to some extent. However, it is not necessary to recognize the possible needs of the consumers. As a consequence, the threat of these substitutes is very low.

In the other side, Tesla could be a major threat to the rest of the automotive industry. An attractive offer for a high-quality electric vehicle from a company that is not outside the mainstream automotive sector could be seen as an existential and very likely threat. The appeal is Tesla's product, which speaks to the public's need for a vehicle that is not only gas-free, but also fully electric. Pricing for Tesla cars is a bit high compared to gasoline cars, but competes with the same segment cars like the Chevy Volt and Nissan Leaf.

However, for the moment, the EV market is demonstrating its robust nature; despite the disruption caused by Covid-19, the market was able to grow. In 2021, EVs sales have surged, with growth in all three top auto markets: China, the US, and Europe. With the electrification and the rapid growth of EV, the switching costs of this industry is getting lower specifically for Tesla and for EV industry in general. In the near future, this threat is expected to become lower.

Fig 22. Global sales of EVs jump in 2021.



6.6 Summary and Analyzing the industry attractiveness: High profitability

The industry of electric vehicles (EV) is very attractive and profitable, especially from Tesla’s point of view. The reasons behind can be separated in value of the product,

bargaining power of suppliers and buyers as well as three different kind of competition, which will be explained in the following.

6.6.1 Growing industry

Value of the product grows: Electric vehicles have become a much more attractive choice to consumers in recent years thanks to increased range, battery life, efficiency, and affordability. EVs have taken the automotive market in northern European states by storm, and sales figures in mainland China are expected to reach about 3.7 million in 2021. Between 2020 and 2026, the size of the global electric vehicle market is expected to increase over four-fold to reach an estimated global market size of some 725 billion U.S. dollars by 2026. This translates to a notable compound annual growth rate of more than 27 percent between 2020 and 2026.

The EV industry is also growing because sustainability and sustainable products like EVs are not only a trend anymore, more and more governments and people truly care about the environment to stop global warming. Some governments in Europe even give incentives when buying an EV, like consumer tax credits in UK for EV purchases. Some countries plan to ban sales of petrol and diesel cars by 2030 (UK) or 2035 (Germany) in zero emission bid. More than 10 millions of electric vehicles were 2020 on the streets worldwide and the number will continue to grow.

6.6.2 Bargaining power of suppliers and buyers are low-moderate

Buyer and supplier have rather moderate-low bargaining power, which makes Tesla's power higher

1) Bargaining power of suppliers: Low-moderate force

- Vertical integration (in-house production of most important components); easier price negotiation of simple components
- Bargaining power of Tesla improves with production volume

2) Bargaining power of Buyers: Low-moderate force

- Highly innovated product with latest technology
- Large customer base
- No pricing negotiations for customers

- Leader in automotive brand loyalty

6.6.3 The intensity of competition will also grow but for now Tesla is succeeding

1) Competitive Rivalry in the Electric vehicle industry (existing firms): Moderate-high force

- Growth of worldwide competition could be a long-term threat
- For example Kia, GM, BMW, Renault, Mitsubishi, Toyota and NIO have released EVs, but competition is not that fierce at the moment

2) Threat of Substitutes: High-moderate force

- Low threat through public transportation, car sharing, hyperloop transportation, trains, planes, etc. which are not really competing with Tesla
- Moderate threat of emergence of new technologies like hydrogen drive
- High threat of automotive industry with Fossil fuel vehicles as well as hybrid cars: BMW, Toyota and VW entered the market, posing a significant threat to Tesla. But still, they are behind on the learning curve (eg with electric batteries)
- Competition is expected to intensify

3) Threat of potential new entrants: no dangerous competition right now, but competition is not sleeping and will grow

Tesla already built entry barriers for new entrants through their outstanding technology, which is superior to all the competition and differentiates Tesla's products. It also has a great reputation worldwide, also because of their innovative leader Elon Musk. Another entry barrier is

Through the entry barrier through supply side economy of scales Tesla can lower its production costs cost per unit as the fixed costs are spread over more units. If a new company wants to enter, they need lots of capital. On top Tesla as a first-mover saved the best spots for super chargers

Porter's five forces analysis shows that Tesla is the leader of the EV industry. As a first-mover with its solid technological know-how and performance Tesla can differentiate from the other car manufacturers who often mainly still focus on fossil fuels besides their EVs. With its sufficient bargaining power regarding suppliers and

buyers, Tesla is also not threatened by substitute products. But Tesla's leading position can be threatened in the long-run through new entrants and competitive rivalry.

Table 2. The Porter's Five Forces analysis elaborates on Tesla, Inc.

	Force	Explanations
Bargaining Power of Suppliers	Moderate-low	• Vertical integration of important components; easier price negotiation of less differentiated components, low switching costs for Tesla • Growth of production volume
Bargaining Power of Buyers	Moderate-low	• Differentiated cars and charging systems • High switching costs, brand loyalty • No price negotiations for customers
Threat of New Entrants	Low	Tesla makes new entries hard through barriers: • Product differentiation through outstanding technology • Saved best charging spots as a first-mover • Government support in some countries
Competitive Rivalry	Moderate-high	• Growth of worldwide competition could be a long-term threat
Threats of Substitutes	High-moderate	• Considerable threats from cars that uses other energies • Lower the threats by specification, electrifications, and rapid growth

Chapter 7 Strategic Group Analysis

7.1 Red Ocean Strategy: Analyzing between Price and Geographic Coverage

The Blue Ocean strategy is about creating an uncontested market place, make the competition irrelevant, create and capture new demand and break the value-cost trade-off. As a first mover with its sports EV “Roadster” model Tesla created its own Blue Ocean in 2003. Tesla decided to go a different direction and create a 100% electric car. Through this Tesla created a green performance vehicle marketplace, which didn’t exist like this before.

Nowadays the EV and car market is very profitable and competitive. In traditional "Red Ocean" marketplace of vehicle, the market is segmented to many different groups according to different customer demands. For example, you can differentiate the car marketplace in price and geographical range.

Tesla competes well in existing market space of “expanding middle-high priced products” with the other luxurious EVs like Lexus (Japanese Toyota) and Infiniti (Japanese Nissan). These brands are in a similar price range from around 36,000 USD (basic models for mass market) to 95,000 USD (luxury models) and can be delivered in similar regions in the US, Asia, Australia, and Europe as Tesla (depending on EV charging infrastructure). Tesla beats the competition through its good reputation and outstanding technology. Tesla also exploits the existing high demand and makes a value-cost trade-off. Other competition is the segment of “global high-end producers” like Porsche, Mercedes-Benz, BMW, and Audi (all German automakers). Besides focusing on gasoline cars, they all also produce EVs like Tesla, but in a higher price range (starting from 65,000 USD). Their gasoline models are shipped worldwide through being independent of the EV charging system they export. Their EVs are delivered to similar markets as Tesla (because of the target groups and again the charging station infrastructure).

Another global competitional segment is “global mid-range producers”. Car makers like General Motors (US), Ford (US), Volkswagen (Germany) have an average car price around 27,000 USD and deliver globally. They produce hybrid cars, which could be interesting for potential Tesla customers in the mass market.

To some extent, also the “national focused high-priced EVs” could be competition. For example, in China, NIO (China, price range starting from 59,000 USD) is a well-known brand but NIO has difficulties entering the European market. The US-American EV brand Lucid (US, starting from 77,000 USD, such as Tesla investing into solar storage) is also only focused on the US and Canadian markets and loses potential

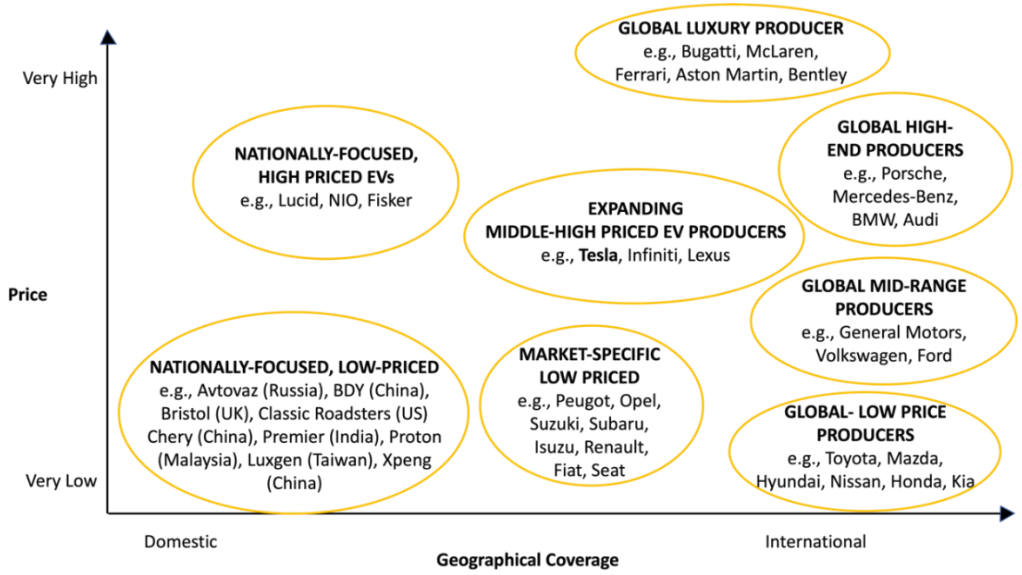
international profit through that.

Almost no competition is expected from low-priced segment, especially from “nationally-focused, low-priced” brands like Luxgen (Taiwan, starting from 27,000 USD). These nationally focused brands can’t compete with Tesla’s EV technology and charging range, if they even sell EVs. With their cheap prices the local car companies mostly attract other target groups than Tesla’s (high-quality, prestige and reputation driven, who have a higher budget).

Also, market-specific low-priced automakers like Peugot, Opel, Suzuki, Renault, Fiat, Seat are low competition for Tesla, because they sell their models mostly in Europe but for example not in the US. More competition is expected of “global-low price producers” like Toyota and Hyundai, who sell their models for a moderate to low price all over the world and are also focusing on cheap EVs for the mass market.

Nowadays there is no reasonable and profitable blue ocean option for Tesla anymore. The blue ocean they created with their market entry in 2003 was already entered by many competitors. Tesla still has an outstanding position in the marketplace, which doesn’t make it necessary to create a new blue ocean. Although, what would make most sense is that they could expand their EVs and its Supercharger network even more globally, e.g., to India, more parts of South America or be a first mover in the African market. This geographical coverage does not seem too reasonable, because they first have to provide the expensive Supercharger infrastructure and these country population are said to not have a high purchasing power. Therefore, they should focus on improving their Supercharger network in the countries they are already operating in (more than 45 countries), to hold their strong position in the market.

Fig 23. Strategic group analysis reviewing between Price and Geographic coverage.



7.2 Analyzing between Price and Product Length

In the business world, firms will have different strategy for their products even though they are in the same industry. The length of product line indicates how firms focus on their customer segment. Product line length can be long if firms have capability to target customer in many groups, and this is the way that they can expand their market. However, the length cannot identify how much they can make a profit. Some firms set a shorter product line in order to ease the economies of scale and increase their profit. This length of product line somehow can relate to the price that firms set for their products. The automotive industry can be used as an example.

The companies which have used the shortest product line and highest price would be Ferrari and Lamborghini. Lamborghini recently is a subsidiary of Audi and is owned by its parent company Volkswagen Group. This business unit is established to focus on the luxury, the speed ability, and the design as same as Ferrari. Ferrari is a manufacturer of Italian sports cars and aims to build unique sports cars that are supposed to bring out the excellence of Italian cars on the roads and on the racing circuits. The target segments of these two brands will be rich and young men. Lamborghini has only 4 models, and the price range is between 200,000 to 500,000 USD. There is no electric car existed for this brand, but they aim to debut by 2025. For Ferrari, they have 7 models and the selling price is between 215,000 to 625,000 USD. Ferrari only one model of Plug-in Hybrid Electric Vehicle. These two brands are considered as the most expensive cars in the graph with short in product lines.

The second group would be the strategies group which the price is less expensive when compare with Ferrari and Lamborghini and come with several models. Volvo,

Porsche, and Tesla are grouped here. The target customer for this group could be modern people who have high income, college graduate, environment-friendly riding experience needed, and also both male and female riders. For Volvo, there are only 5 models existed with both hybrid car and pure electric cars. The price is around 34,100 to 67,300 USD and their range of automobiles includes sedans, SUVs, and crossovers. There are all gasoline, hybrid, and pure electric cars. The electric car is XC40 model, the price would be started at $54,985 based on U.S. dealerships in January 2021. For the trucks and buses are belong to Volvo Trucks Corporation which is different subsidiary. For Tesla, there are only 4 models existed which are SUVs, sedans, and mid-size SUVs with pure electric system. The price is between 38,740 to 113,940 USD. The others 2 models of Tesla trucks will be soon launched in 2022.

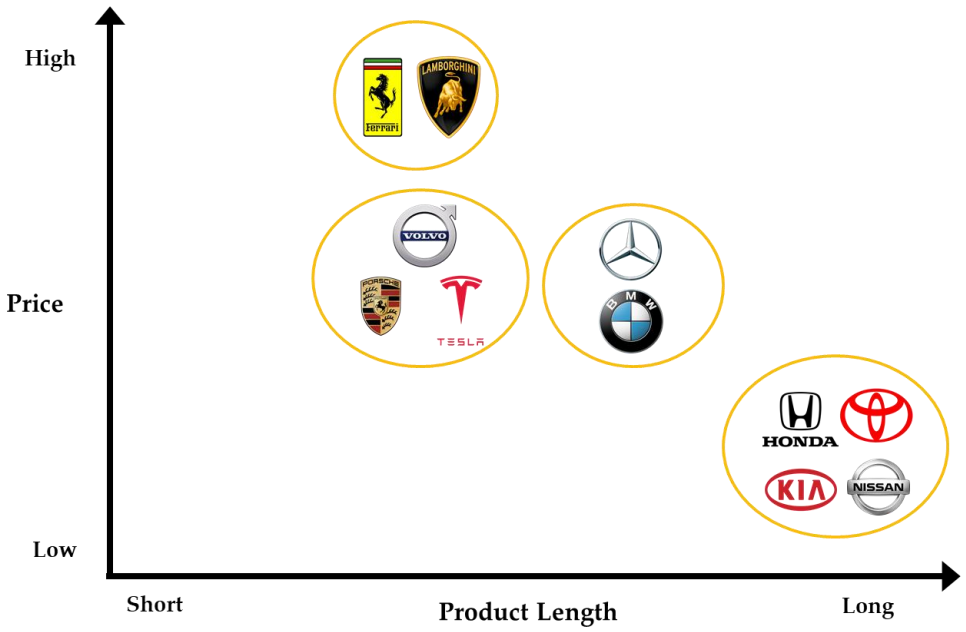
The third group is the group which the price is similar to the second group but there are more product lines. BMW, Benz, and Audi provide more choices for their customers by selling more models. The target customer would be the same. However, this is more suitable for family because there are more than one people to make a decision, a lot of choices will be easier to match their needs. For Audi, currently there are 14 models existed including mini-SUVs, SUVs, sedans, sport, crossover, coupe, convertible, and hatchback. The price is between 33,900 to 116,500 USD. Audi also produces a pure electric SUV which is e-tron which the price is starting at 65,900 USD. There are 24 models available from Mercedes-Benz as the passenger cars including vans, SUVs, hatchbacks, sedans, convertibles, 5 doors, and 4 doors coupe. The price range is between 33,950 to 184,900 USD. There is only one model for electric vehicle which is EQS Sedan, and the selling price is 102,310 USD. The other transporters are trucks and buses which are more likely to target on industrial customers. The last brand is BMW, there are 16 models available. The price range is between 35,400 to 139,500 USD. The BMW iX and i4 are all electric cars which will be available in Spring of 2022.

The last group is the brands that have lower price with a lot of product lines. Toyota, Honda, Nissan, Kia, are classified in the same group because they have the same target customers. These brands aim to sell their product to the people who are in 30-50 years old with middle-range income and looking for automotive vehicles with value their money. The target group also can be young families because these brands can provide many models for them to select to match with their needs. These people do not need a luxury brand, so they just need the car to use in their daily life for the drivers themselves and for their family as well. The maintenance cost for these cars is not high because they were truly produced for the mass market which means it is very easy to find the spare parts. The price strategy for these brands is according to these conditions. There are 53 models including SUVs, trucks, sedans, minivans, crossovers, and hybrids &

fuel cells for Toyota, and the price is between 20,075 to 50,500 USD. Toyota also uses many different promotional strategies to increase the sales volume especially launching the advertisement. Recently, Toyota is paving the way to an all-electric, and it was expected to launch in 2025. There are a lot of hybrid models existed and the price range is starting from 23,650 to 495,000 USD. For Honda, there are 20 models. The price range is between 21,420 to 37,895 USD. Honda announced its first all-electric vehicle in 2024, so there are only hybrids and gasoline cars existed not. The starting price for their hybrid car is 25,210 USD. Nissan comes with 19 models including electric, SUVs and crossovers, sport cars, sedans, and trucks. The cheapest Nissan car is cost 14,980 USD and the most expensive car is 113,540 USD which is a sport car. There are two models for electric cars, the first one is 27,500 USD, and another one is soon available. The last brand is Kia with 17 models. The price is starting at 16,150 USD for sedan and 44,990 USD for their hybrid car. The full electric vehicle model will be launched in 2022.

To compare with all car brands in this graph, Tesla is the first and leader in producing full all-electric cars. The company is considered in the blue-ocean, and they still can maintain this competitive advantage because these other brands also have their own characteristic and unique selling point which are completely different from Tesla. Moreover, it's not easy for newcomers to beat Tesla at this moment because in general when people want to purchase a car they definitely consider on the creditability of the brands. The consumers need to make sure that they can drive safely, and it would take time for creating that creditability.

Fig 24. Strategic group analysis reviewing between Price and Product length.



Chapter 8 Resources and Capabilities Analysis

8.1 Main Resources and Capabilities from Tesla

8.1.1 Tangible Resources

Tangible resources are the resources that are physical and can also be easily identified by the organization and competitors. Furthermore, these resources can be easily obtained from the market or developed in the long run. Based on this fact, as competitors acquire the same or similar tangible resources with a firm, these resources may only give an inconsequential competitive advantage to firms.

Tangible resources available at Tesla, Inc. include the following features:

8.1.1.1 Physical Resources

1) Land

For such automotive industry of Tesla, Inc., automotive assembly line may include electronics, coating and painting technologies, and passenger safety systems as all the key segments of the automotive industry. Each of these segments is comprised of several specialized and complex manufacturing by producing an entire automobile. Therefore, land is not only a tangible resource but also a vital role in doing business, which includes all places owned and rented by Tesla for purposes of hosting production units as well as for accommodating the inventory in warehouses.

Nowadays, with most of the Tesla vehicles produced at its headquarter factory in Fremont, California, Tesla has developed its vehicle business by expanding into a new location at Storey County, Nevada (the place for Gigafactory 1). Besides, as Tesla continues to do business globally, they built the plants overseas in the Asian area, Shanghai, China (Gigafactory 3), and had already planned to expand their production business in Grünheide, Germany (Gigafactory 4) and Austin, Texas (Gigafactory 5). Accordingly, as we know from above, Tesla owns various land resources not only just on the same continent, they attempt to establish their business into various markets.

2) Materials and equipment

Materials include all the raw materials and other packaging materials that Tesla uses for the successful production and packaging of its vehicle products. As we know, every material is tangible from nature, which may be easily accessed by other competitive opponents for their own production processes and other purposes. Despite the fact, Tesla would like to stand out from the competition.

Tesla manufactures its own key components of each automobile, inclusive of the electric motor, the battery pack, the charger, etc. For example, Tesla produces its lithium-ion battery and electric vehicle components at Gigafactory 1, a supporting plant born out to reduce battery cell costs and to supply enough batteries from the vehicle demand. Moreover, with the knowledge that Japan's leading electronics corporation, Panasonic Corp., reached an agreement with Tesla to invest at the Gigafactory 1 in Nevada in 2014, Panasonic agreed to lead the lithium-ion battery cell production and manage parts of the manufacturing with Tesla. Under such cooperation, Tesla enhances its superiority with other automotive competitors by improving the production value and sharing the manufacturing experiences from the professional electronics company.

When it comes to equipment in manufacturing issues or industries, "Automating intelligently" may be a technological trend in the global. For the equipment in the assembly line of Tesla, over 75 percent of Tesla's production line is automated nowadays. Manufacturing applications of automation and robotics have supported Tesla to transcend the conventional performance with reaching extraordinary levels of efficiency in the production and maintaining stable quality in its products.

8.1.1.2 Financial Resources

We would like to take the Debt-to-Equity Ratio (D/E ratio) as a financial indicator for describing how Tesla performs in its financial resources. The D/E ratio is calculated by dividing its long-term debt by stockholders' equity and can be used to evaluate how much leverage a company is using. The information from the D/E ratio indicates whether the fund for a company is run by debt or by its own equity and earnings surplus. Therefore, the higher leverage ratios tend to imply a company or stock with higher risk to shareholders. For example, for doing investment, when sources of funding of a firm rely more on debt than on its own capital, we suggest that, for the company itself, it has more pressure on the repayment; for the bank and creditors, the company has more operating risks. However, the D/E ratio is difficult to compare across industry groups where ideal amounts of debt will vary. Thus, when considering the financial indicator by the D/E ratio, we must compare the companies in the same industries. In the case of the automotive industry, the average D/E ratio of companies from the automotive industry is about to be approximately 2.0.

Table 1 shows the D/E ratio from the historical data of Tesla, Inc. According to the latest data at the top of Table 1, Tesla's D/E ratio for the three months ending September 30, 2021 was 0.23. Besides, overall, between the year from 2016 to September 2021,

the D/E ratio from Tesla generally shows under the ratio of 2.0. These calculation reports suggest that Tesla has been doing well in the debt leverage giving few worries about the repayment, and creditors would stay low concerns while doing investment funds with Tesla.

Table 3. Tesla Debt-to-Equity Ratio Historical Data.

Date	Long Term Debt (Billion)	Shareholder's Equity (Billion)	Debt to Equity Ratio
2021-09-30	$6.44	$27.89	0.23
2021-06-30	$7.87	$25.65	0.31
2021-03-31	$9.05	$23.86	0.38
2020-12-31	$9.61	$23.08	0.42
2020-09-30	$10.61	$16.89	0.63
2020-06-30	$10.46	$10.72	0.98
2020-03-31	$10.73	$10.04	1.07
2019-12-31	$11.63	$7.47	1.56
2019-09-30	$11.31	$6.88	1.64
2019-06-30	$11.23	$6.57	1.71
2019-03-31	$9.79	$5.47	1.79
2018-12-31	$9.40	$5.76	1.63
2018-09-30	$9.67	$5.30	1.82
2018-06-30	$9.51	$4.73	2.01
2018-03-31	$8.76	$5.32	1.65
2017-12-31	$9.42	$5.24	1.80
2017-09-30	$9.58	$5.78	1.66
2017-06-30	$7.13	$6.22	1.15
2017-03-31	$7.17	$5.80	1.24
2016-12-31	$5.88	$5.54	1.06
2016-09-30	$2.46	$2.68	0.92
2016-06-30	$2.66	$2.52	1.05
2016-03-31	$2.53	$0.97	2.60

Source: Macrotrends.net

8.1.2 Intangible Resources

8.1.2.1 Technology Resources

1) Intellectual property

Intellectual property rights protect Tesla's manufacturing techniques and product originality, preventing other competitive players from replicating or gaining access to its unique product blend, product ingredients, and inputs. This ensures Tesla's uniqueness and renders its goods unrivaled by competitors.

Tesla's manufacturing techniques and product distinctiveness are protected by intellectual property rights, which prevent other competitive companies from replicating or gaining access to its unique product blend, product ingredients, and inputs. This ensures Tesla's uniqueness and makes its goods unsurpassed among competitors. Tesla has a total of 3304 patents worldwide. These patents are part of 986 unique patent families. There are 2147 active patents out of 3304 total patents. The large number of patents created helps Tesla to become a leader in the electric vehicle industry.

Fig 25. The worldwide patents obtained by Tesla.

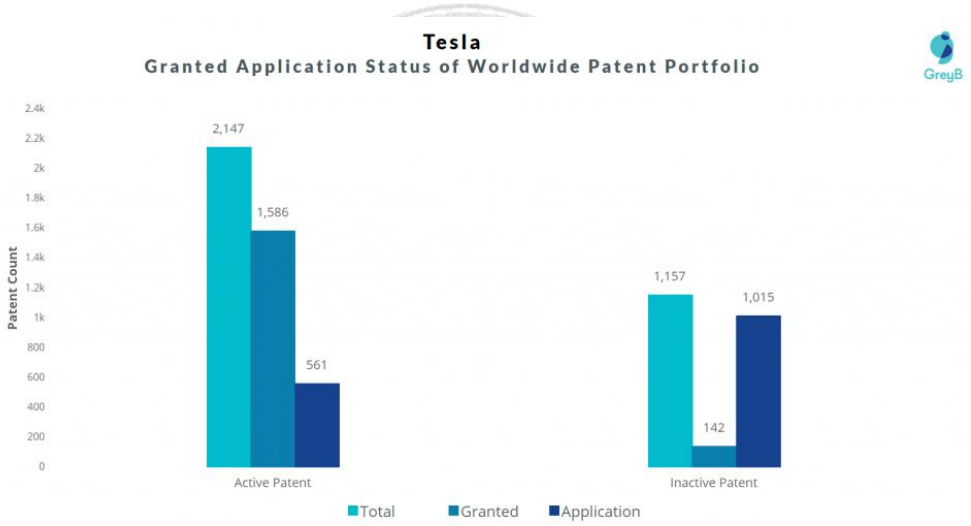


Fig 26. The family patents obtained by Tesla.

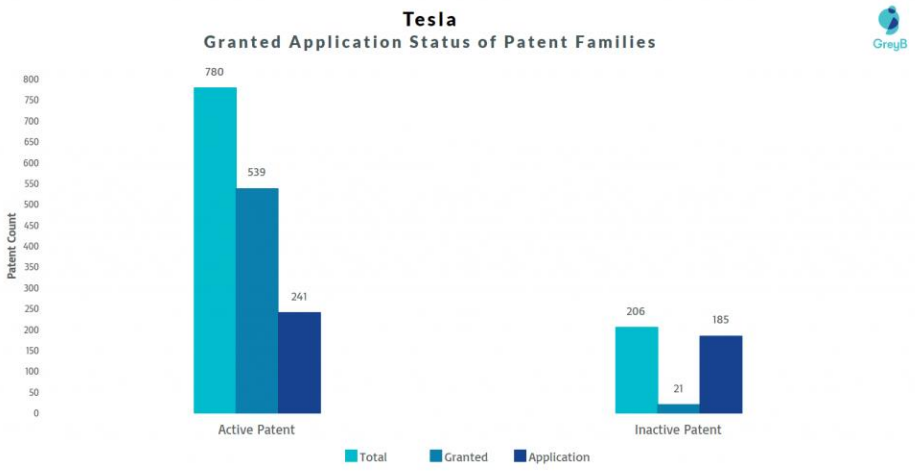
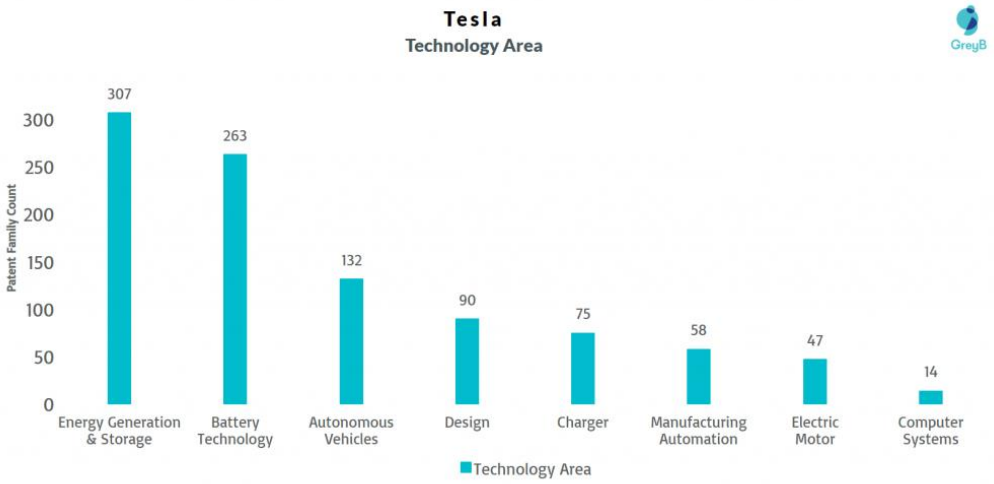


Fig 27. The patents in technology obtained area by Tesla.



2) Patented technology, computer software, databases, and trade secrets

Tesla's is also successful in its operations and enterprises, and it has a big customer following that is loyal and purchases on a regular basis as a result of its trade secrets, which include a secret formula for product competitiveness. Tesla also routinely develops and implements innovative technology that is created internally and hence patented. This comprises hardware and software for enhancing the company's operational operations and, as a result, providing a competitive advantage in major markets.

8.1.2.2 Reputation Resources

1) Brand value

Tesla's brand reputation is established on its historical uniqueness, where the brand has worked hard to offer high-quality goods and earn consumer loyalty over decades. Competitors cannot imitate the company's brand reputation, which is built on its organizational culture and unique relationship with consumers, and it may become a source of competitive advantage.

In 2021, brand value becomes Tesla's one of the competitive advantages as its ranking in the automotive industry becomes higher and higher compared to previous years.

Fig 28. Tesla's Brand value ranking in 2021.

The Kantar BrandZ Most Valuable Global Brands 2021: Automotive Sector

Rank 2021	Rank Change	Brand	Country of Origin	Brand value 2021 ($MN)	Brand value 2020 ($MN)	Brand Value Change
1	+3	Tesla	US	42,606	11,350	+275%
2	-1	Toyota	Japan	26,974	28,388	-5%
3	-1	Mercedes-Benz	Germany	25,835	21,349	+21%
4	-1	BMW	Germany	24,821	20,517	+21%
5	+1	Honda	Japan	10,570	9,974	+6%
6	-1	Ford	US	10,444	10,067	+4%
7	+1	Audi	Germany	8,931	7,334	+22%
8	-1	Nissan	Japan	8,317	8,658	-4%
9	0	Volkswagen	Germany	7,059	6,462	+9%
10	0	Porsche	Germany	6,858	5,606	+22%

2021	2020	Logo	Name	Country	2021	2020	2021	2020
1 ▲	2	TOYOTA	Toyota		$59,479M	$58,076M	AAA	AAA
2 ▼	1		Mercedes-Benz		$58,225M	$65,041M	AAA-	AAA-
3 =	3		Volkswagen		$47,020M	$44,897M	AAA-	AA+
4 =	4		BMW		$40,447M	$40,483M	AAA-	AAA-
5 =	5		Porsche		$34,326M	$33,911M	AAA-	AAA-
6 ▲	12		Tesla		$31,986M	$12,416M	AA+	AA
7 ▼	6	HONDA	Honda		$31,366M	$33,102M	AAA	AAA-
8 ▼	7		Ford		$22,676M	$18,515M	AA+	AA+
9 ▲	10		Volvo		$17,750M	$16,914M	AA+	AA
10 ▼	9		Audi		$17,187M	$16,973M	AAA-	AAA-

2) Good will

Tesla's reputation and customer experience have allowed for the building of long-standing goodwill for the firm. As a result, Tesla's entire brand equity has increased. The Tesla brand's goodwill has been built over a long period of time via continual hard effort, and it cannot be replicated by competitors.

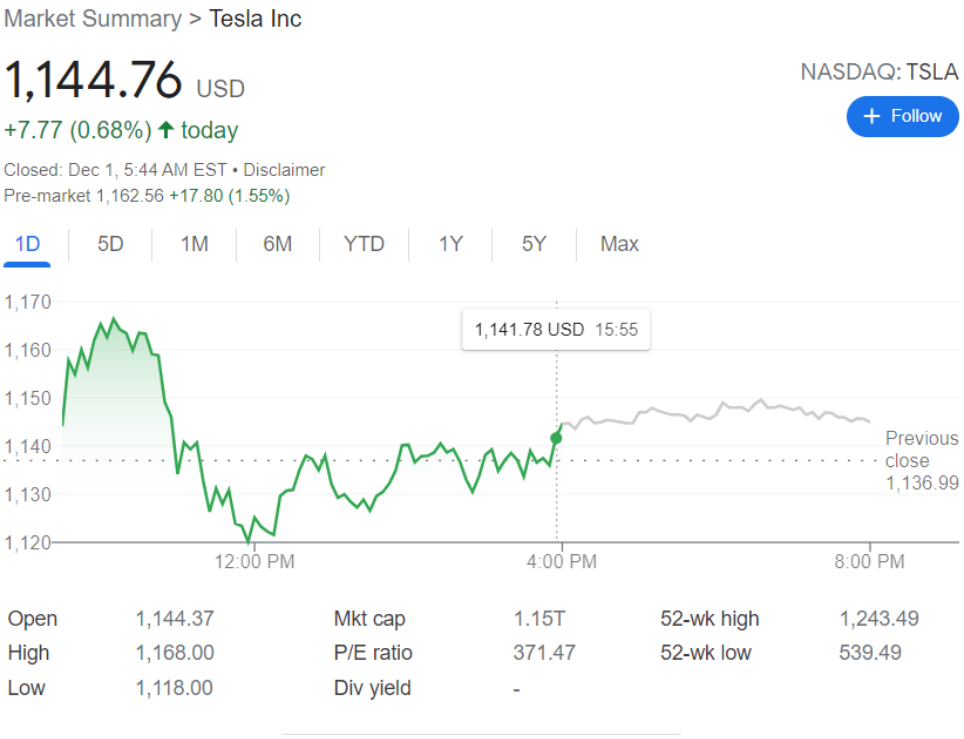
The good will of Tesla is performed through the sharing of its patents to the ones

who want to use Tesla's technology in good faith and Elon Musk believes that would help the world all benefit from a common in making electric vehicles.

3) Trade Name

The company's trade name is also an intangible resource because other players cannot adopt or imitate it. Customers recognize the trade name, and it provides instant identification for the firm across borders. The trade name also communicates the brand promise and values to customers all around the world, providing the firm with a competitive edge. Recently, both Tesla Inc.'s trade name and stock price are considered to be very high due to the success of its flagship Model S and Model X.

Fig 29. The chart report for Tesla's stock on December 1, 2021.



4) Customer service

Tesla offers its consumers a one-of-a-kind customer experience through its brand activities and goods, as well as marketing initiatives. Though rival competitors may imitate marketing efforts, the strategic direction and intent with which customer experience and brand activities are developed is unique and provides Tesla with a distinctive source of competitive advantage. As a result, Tesla is the leader in brand loyalty across automotive sectors.

5) Customer list

Tesla has a wide range of product lines and product offerings for various target groups and consumer segments. Furthermore, the company performs on a global scale, with consumer marketplaces in over 100 countries. Based on this, it is reasonable to say that Tesla has developed unique consumer marketplaces — with comparable features – in several nations. Furthermore, this customer market is made up of several consumer groups and classifications. As a result, Tesla has diverse customer groups in each country, which cannot be imitated due to the social ambiguity involved. In Oct, 2020, Tesla Model X, Model S and Model 3 took the first, second and fourth place for the monthly car searches. Moreover, in the Top Electric car ranking, Tesla Model 3 is dominating in most of the countries.

Fig 30. The world's most popular electric cars.

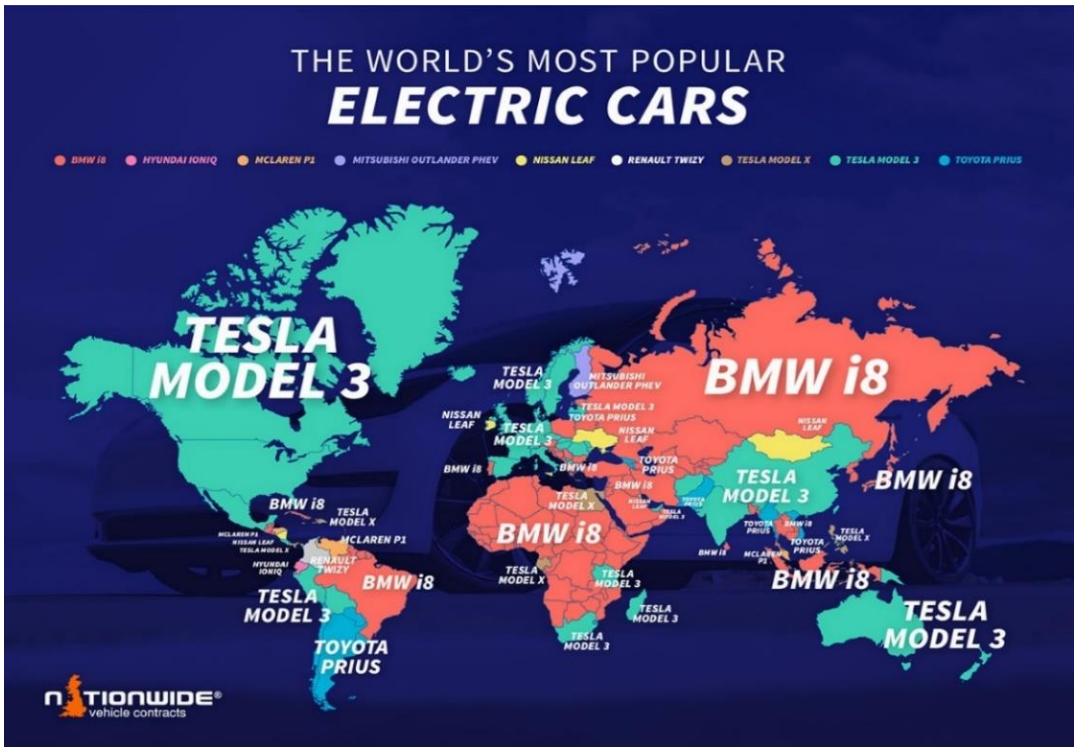


Fig 31. The ranking for car model searches. (Source: Nationwide Vehicle Contracts)

Ranking Car Model Monthly Searches

1 Tesla Model 3 1,852,356
2 Nissan Leaf 565,689
3 Tesla Model X 553,999
4 Tesla Model S 524,479
5 BMW i3 347,333
6 Renault Zoe 343,815
7 Audi e-Tron 278,379
8 Renault Twizy 166,459
9 Jaguar I Pace 154,064
10 Hyundai Kona Electric 136,329

Top Electric Cars By Country

Australia Tesla Model 3
Canada Tesla Model 3
Egypt Tesla Model X
Ireland Nissan Leaf
Italy Tesla Model 3
UK Tesla Model 3
United States Tesla Model 3
France Tesla Model 3
Germany Tesla Model 3
China Tesla Model 3
Hungary Tesla Model 3
Netherlands Tesla Model 3
New Zealand Tesla Model 3
United Arab Emirates Tesla Model 3

8.2 The Framework for Appraising Resources and Capabilities

8.2.1 Key Strengths

Brand value is considered as the first key strength because it is important element

for having competitive advantage. Tesla is in the top ten rank of the most valuable brand in the world in the automotive sector which means the company have high credibility, customer recognition and loyalty. Intellectual Property is another crucial key strength for the innovative company. Tesla is holding 3304 patents globally and 986 of them are unique patent families. These patents will guarantee that the competitors almost have zero chance to imitate Tesla's products and they represent the company's achievement in terms of innovation. Tesla's successful also can be indicated by the market that the company has expanded. For the customer list can guarantee Tesla's successful in the mass market. By selling model 3, the company can increase their sales and be the best-seller car in many countries. For the tradename, it helps to communicate the business strategy. Once people think about the name "Tesla", they think about the electric car. On the other hand, when people think about the electric car, Tesla is the first name that they think as well.

For the materials and equipment, Tesla has a very strong production line which is generated from their innovation. Some of the product's component, the company also partner with the specialize outsource firm. And for the land, by expanding to many continents, the company also own the land that they used to build their factories. The locations that they are were strategically plan for the products distribution. The last key strength for Tesla is the financial performance. Even tough the company has debt/equity ratio, but they still have a good financial management because this kind of debt has never affected company's performance.

8.2.2 Superfluous Strengths

For company's good will is considered as the superfluous strength. The good will here refers to allowance for anyone who would like to use Tesla's patents or intellectual property to create the great benefit to the society. There will be no imitate issue because there is a clear purpose for this good will, and it depends on the company's consideration to allow whom to use.

However, this might not be a factor that enhance the company to get a lot of sales, but it is a good strategy. It is truly able to generate the good perception and brand image for the outsiders because Tesla has done thing that they stated on their vision, which aims to help the world to create zero emission.

8.2.3 Key Weaknesses

Tesla two key weaknesses are its infrastructure and its car maintenance. Many charging stations are quite far from each other or already occupied by other Tesla users, so drivers could feel worried about finding the next charging station or wait if they take a detour or even have to be towed in the middle of nowhere. To overcome the blocking of a charging station, Tesla recently introduced a small fee, if the drivers leave their vehicles at the charging station longer than needed, when it's fully charged.

Another aspect is that potential customers have to wait a long time for the delivery for their car and could be frustrated about the non-stable prices. The average waiting time for the model 3 is ten month and during this time the car price could be less than when the customer ordered it, what could be frustrating to the potential customers.

Another key weakness is Tesla's maintenance and repair service. If some parts of the Tesla car break, the repairing system is complicated. The Tesla driver can't simply go to a common garage to fix his EV. Also, the parts for fixing might not be found in the local markets, which means customers can't compare prices and decide to go for the cheapest. Customers don't have any choices for fixing their cars than to go to an official brand's garage only, which are sometimes quite far away and more expensive.

Fig 32. The framework for appraising resources and capabilities for Tesla.

Chapter 9 VRIS Analysis

Table 4. Analyzing Tesla's Resources for VRIS Analysis

Resources						
	V	**R**	**I**	**S**	**Competitive Consequences**	**Performance Implication**
Materials	Y	Y	N	N	Temporary Competitive Advantage	Above Average to Average Returns
Equipment	Y	Y	N	N	Temporary Competitive Advantage	Above Average to Average Returns
Databases	Y	Y	Y	N	Temporary Competitive Advantage	Above Average to Average Returns
Brand Value	Y	Y	Y	Y	Sustainable Competitive Advantage	Above Average Returns
Trade Name	Y	Y	Y	Y	Sustainable Competitive Advantage	Above Average Returns
Customer Service	Y	Y	N	N	Temporary Competitive Advantage	Above Average to Average Returns
Facilities in Foreign Countries	Y	N	Y	N	Competitive Parity	Average Returns
Repair and Maintenance Services	Y	N	N	N	Competitive Parity	Average Returns

Notes: Y stands for Yes; N stands for No.

Table 5. Analyzing Tesla's Capabilities for VRIS Analysis

Capabilities						
	V	**R**	**I**	**S**	**Competitive Consequences**	**Performance Implication**
Low Debt-to-equity Ratio	Y	Y	N	N	Temporary Competitive Advantage	Above Average to Average Returns
R&D	Y	Y	Y	Y	Sustainable Competitive Advantage	Above Average Returns
Intellectual Property	Y	Y	Y	X	Temporary Competitive Advantage	Above Average to Average Returns
Patented Technology	Y	Y	Y	X	Temporary Competitive Advantage	Above Average to Average Returns
Trade Secrets	Y	Y	Y	Y	Sustainable Competitive Advantage	Above Average Returns
Good Will	Y	Y	Y	Y	Sustainable Competitive Advantage	Above Average Returns
Leadership	Y	Y	Y	Y	Sustainable Competitive Advantage	Above Average Returns
Customer List	Y	Y	N	N	Temporary Competitive Advantage	Above Average to Average Returns

Notes: Y stands for Yes; N stands for No.

Chapter 10 Value Chain Analysis

10.1 Primary Activities

1) Inbound logistics

Inbound logistics brings supplies or materials into a business. Tesla has managed a large supply-chain, they receive components from thousands of suppliers located worldwide. The battery production was a challenge for Tesla because they use a range of scarce materials such as aluminum, steel, cobalt, lithium, nickel, and copper. Fortunately, Tesla has overcome this challenge by partnering with Panasonic, and build the Gigafactory to reduce cost of production. For some of car components, Tesla also has a strategic relationship with Daimler and Toyota. Since Tesla has a specialized line of products, it needs a wide range of different raw materials. The company also rent a huge number of warehouses in order to storage those parts especially in the United States. Tesla is leasing a massive 1.3 million square feet in the Oaks Logistics Center in Livermore, California. This leasing is considered as the largest industrial lease signed in San Francisco East Bay history. Beside of this, other main locations for the warehouses are in Sparks Nevada, Bethlehem in Pennsylvania, and Elkridge in Maryland. Some of these places are also the locations of the factories, but some are not, so the materials will be shipped into each Gigafactory including where are located abroad.

2) Operations

Tesla’s vertical integration is outstanding from the traditional car manufacturers. Tesla vertically integrates the packing, the assembly of batteries, managing the body design, and recharging systems with their own facilities. Recently, Tesla conducts vehicle manufacturing and assembly operations in California, Germany, and China. The company produced and delivered approximately half a million vehicles in 2020, and this following table shows the status of each factory in the last quarter 2020.

Table 6. Manufacturing capacities from Tesla.

Installed Annual Capacity		Current	Status
Fremont	**Model S / Model X**	100,000	Production
	Model 3 / Model Y	500,000	Production
Shanghai	**Model 3 / Model Y**	450,000	Production
Berlin	**Model Y**	-	Construction
Texas	**Model Y**	-	Construction
	Cybertruck	-	In development
TBD	**Tesla Semi**	-	In development
	Roadster	-	In development
	Future Product	-	In development

In the operating process, a lot of robots are used to increase the production capacity. The MINO robot will help Tesla to focus on Body in White (BIW) Production Systems or the stage where the car body's frame has been joined together before painting and putting the glasses, seats and so on. Another robot that Tesla uses is Kuka, which is used to be responsible for several Model 3 production line duties including spot welding, laser welding, handling, and loading materials, and various other tasks.

3) Outbound logistics

The distribution channel of Tesla consists of its own stores that play a crucial role in educating customers about the benefits of electric cars. Up to August 2021, Tesla's total store count around the world is 438, along with about 100 service centers. Since Tesla announced to shift most of its sales to online without some of the physical showrooms, the purchase of vehicles has changed to be done on online platforms. Delivery times were raised because vehicles are shipped from thousands of miles away from Tesla's headquarter manufacturing plant in Fremont, California. Nevertheless, their supporting plants, including the European (Germany) and Asian (China) factories, will decrease delivery times substantially nowadays.

Besides, unlike other automotive manufacturers, Tesla does not deal with dealers and re-sellers, preferring to sell directly to end-users. This can be mentioned as a powerful source of value creation in Tesla outbound logistics for two reasons. Firstly, considering the high demand for Tesla electric vehicles, direct sales decrease the time of delivery of vehicles to customers. Secondly, direct sales maintain the costs of Tesla cars from further increases. Tesla electric vehicles are already expensive while selling

them through franchised dealerships would have pushed the prices even higher.

4) Marketing and sales

The automobile industry has been marked as a competitive market among industries. Thus, Tesla operates through social media to promote its brand. While many companies have invested lots of money in the marketing field, Tesla tends to minimize the amount in marketing than other companies in the business. It invested in marketing mainly on its website and social media, which most fans of Tesla are engaged on Twitter with the CEO of Tesla, Elon Musk. According to Elon Musk, Tesla's marketing and sales depend on an unconventional model and rely on word of mouth from its satisfied customers. Tesla attracts global coverage in the media through its high quality and unique product features.

5) Service

Together with stores, Tesla also holds their own service centers. Tesla provides post-sales services, inclusive of repair and maintenance, vehicle insurance, at its service centers along with about 100 service centers in the world nowadays. Moreover, they have built and expanded the charging station network (Supercharger stations) for their customers' vehicles, enhancing the value of the products.

10.2 Supportive Activities

1) Firm infrastructure

For Tesla, firm infrastructure is divided into 2 elements. The first element would be the automotive segment which is any activity that supports the design, development, manufacturing, sales, and leasing of electric vehicles. The second would be the electric generation and storage segment. The manufacturing, design, installation, sales, after sales services processes would be supported. By dividing into 2 segments, both of them are under the administration of Elon Musk as the Chief Executive Officer. However, another important element that this firm uses as their competitive advantage and support these activities is an extensive database developing every single activity to work effectively and efficiently.

2) Human resources

As an innovative organization, Tesla not only emphasizes the robotic or smart system, but the talented workforce is also important for Tesla. Human resources will

enhance the company to get and maintain the competitive advantage, and also to support a whole company's activity. There is a policy to hire talented people worldwide to work with them and help the world by creating zero emission. With this way, there are a lot of skilled labors in the company who will advocate for the company's business activities. Moreover, an innovative problem-solving organizational culture is also applied with this company. It will enhance the employee to develop a profitable solution for any problems. Human Resources is crucial for the organization development and affects organizational success. Therefore, Tesla has emphasized on human resources as a top priority.

3) Technology development

In the first stage, Tesla is considered as a unique company because their products are the latest and breaking technology in the automobile industry. Technology development is considered as a company's core value to drive their success. Especially for research and development, Tesla invested a lot on this part and the investment has increased heavily within these two years. By getting a useful research result, Tesla's business activities will be supported more and more, and their competitive advantage is maintained. Moreover, the relationship between the company and their customers also relies a lot on Technology. Website is a tool for customers to get the information and to order the cars through making a payment. Thus, they need to use their technology to heavily support their main channel or website as well.

4) Procurement

The procurement in the value chain denotes the processes involved in purchasing the inputs that may range from equipment, machinery, raw material, supplies, raw material, and other items necessary for producing the finished product. Tesla has a lot of suppliers around the globe, and the company has maintained a good relationship with them. The materials are very significant for a whole value chain because they are the fundamental to drive the company. Production process for example, Copper, Cobalt, and the other ingredients are emphasized for lithium-ion batteries production. These are indicated as high-cost materials, and Tesla relies heavily on their direct suppliers.

Chapter 11 Differentiation Strategy

Out of the business strategies cost leadership and differentiation, Tesla uses Broad Differentiation to compete in the automobile industry.

Tesla's current approach is to create one-of-a-kind automobile models with superior performance and technology, as well as significant customer benefits that set it apart from other automakers. Its automotive models have environmentally friendly technologies, making them appealing to a large and increasing market of environmentally aware consumers. Customers are willing to pay a premium for high-quality products and have a positive perception of environmentally friendly vehicles.

Targeted Differentiation was Tesla's initial generic strategy when they debuted the electric sports vehicle Roadster (price 128,500 USD) – the first of its kind to disrupt the industry – and the premium Model S, both of which were based on Tesla's revolutionary EV technology. The Roadster was targeted to attract price-insensitive buyers that care about other product characteristics such as fast-acceleration and clean driving. The company sold only 2,500 cars of these exclusive cars which indicates that Tesla started out as niche player. Tesla's goal is to set itself apart with innovative technologies and a luxurious aesthetic for its tiny product line. They started with early adopters and high-end customers who aren't price-conscious. "Tesla's strategy is to start at the upper end of the market, where customers are willing to pay a premium, and then drive the market down as quickly as possible to higher unit volume and lower pricing with each consecutive model," Musk explained.

Tesla shifted to broad-based differentiation as the brand grew in prominence. Tesla broadened their product line by introducing new vehicles and services and targeted a wider customer segment. In this example, the corporation took advantage of its low production costs and good reputation to manufacture lower-cost goods for the mainstream market, such as the Model 3 (35,000 USD). The strategy approach aimed at mass manufacturing of affordable automobiles is desirable since it allows Tesla to raise its unit sales volume while simultaneously lowering the cost of its succeeding models, reducing Tesla's competition.

For example, in the energy market, the power distinguishes itself by having a more attractive and visually pleasing appearance than most existing home battery solutions, such as compact diesel generators. It's simple to use, set up, and maintain, and it makes use of high-capacity batteries.

Solar panels are an excellent environmental trend with a lot of promise. Tesla has distinct advantages in entering the market for batteries for home and business energy

storage.

Also, the marketing abilities differentiate from the competition. Most of the marketing happens online and not on the for automobile typical channels like TV and out of home advertisements. Elon Musk himself has a big fanbase on Twitter and eWOM helps Tesla to extend the media's attention. Through that they can target their customer easily.

Chapter 12 BCG Matrix Analysis

Based on the BCG matrix analysis of studying the relationship between relative market share and market growth, we would like to discuss the long-term strategic planning in the case of Tesla, Inc. As we know, Tesla has two main businesses. One is about electric vehicles, and the other is energy generation and storage, where energy generation and storage mostly digs in with solar energy products. Therefore, this BCG matrix analysis from our study will analyze these two main businesses separately and thoroughly.

12.1 BCG Analysis on Tesla's EV Models

Firstly, about the market share performance of each Tesla's EV model, how beloved was Tesla in the Global EV Market recently? From Figure 33 of the Global Electric Vehicle Top 20 EV Sales report below, Tesla Model 3 had obviously won the best seller with over 65,000 deliveries at the end of 2020, which sold double over the second-place EV. Another SUV (Sports Utility Vehicle) model from Tesla, Tesla Y, had followed closely at the fifth place. Besides, by viewing the following two Best Luxury Hybrid and Electric models ranking from U.S. News & World Report, Tesla's Model S and Model 3 have stood out at the second and third place in the types of cars, respectively (Table 7). In the types of SUVs ranking, Tesla's Model X and Model Y have the place at second and sixth, correspondingly (Table 8). Next about the market growth of each Tesla's EV model, we should consider the main point on the sales and delivery estimates (Figure 34). In the period from 2017 to 2020, we find that the numbers of both Model 3 and Model Y have continuously been growing year by year. Especially, the Model 3 has increased at a rapid speed while Model Y started its deliveries in March 2020. And we can anticipate that the numbers of these two Models will keep rising in the future. By contrast, Model S and Model X were slow to moderate growth in the market sales deliveries.

Therefore, by giving the conclusion of each Tesla Model from the above review to make into the BCG matrix analysis (Figure 39), we suggest that Model 3 be supposed to be in both high market growth and market share (Stars quadrant). Model Y, which was released in around early 2020, has a high market growth but mid-to-low market share (Question marks quadrant). Model S and Model Y are both regarded as together, which have a high ranking in each market share but mid-to-low market growth (Cash cows quadrant).

Fig 33. Global Top 20 Plugin Electric Vehicle Sales Ranking in the end of 2020.

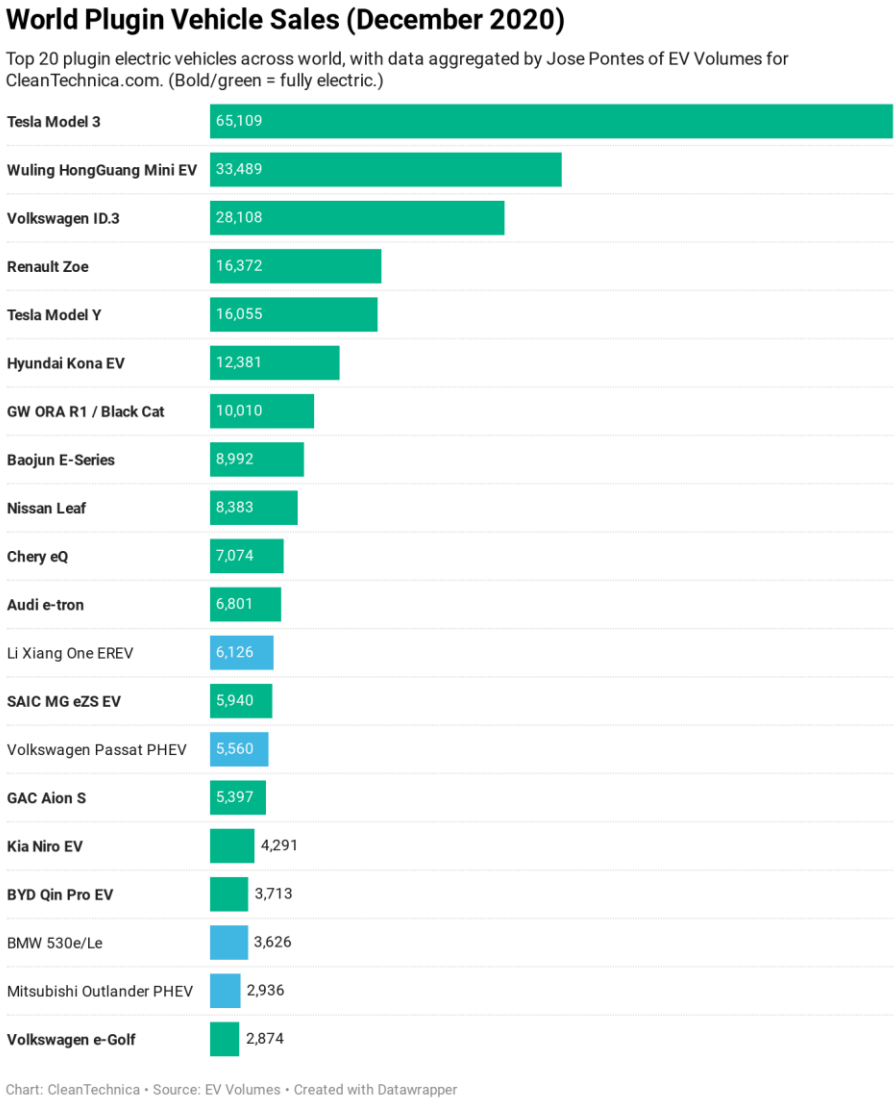


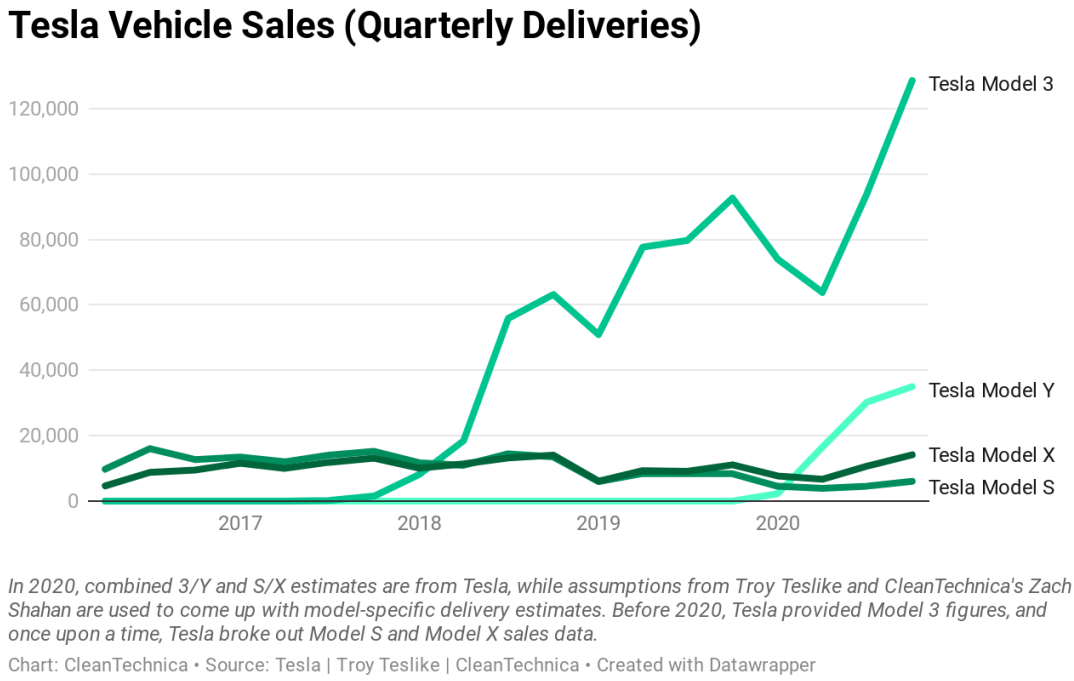
Table 7. Best Luxury Hybrid and Electric Cars for 2021 & 2022.

Best Luxury Hybrid and Electric Cars for 2021 & 2022	
1	2022 · Mercedes-Benz EQS
2	2021 · Tesla Model S
3	2021 · Tesla Model 3
4	2021 · Porsche Taycan
5	2022 · Audi e-tron GT
6	2022 · Polestar 2
7	2022 · BMW i4
8	2022 · Lexus ES Hybrid

Table 8. Best Luxury Hybrid and Electric SUVs for 2021 & 2022.

Best Luxury Hybrid and Electric SUVs for 2021 & 2022	
1	2022 · Porsche Cayenne Hybrid
2	2021 · Tesla Model X
3	2022 · Audi e-tron
4	2022 · Lexus NX Hybrid
5	2022 · Lexus RX Hybrid
6	2021 · Tesla Model Y
7	2022 · Lexus UX Hybrid

Fig 34. Tesla four prime EV models sales growth from 2017 to 2020.



12.2 BCG Analysis on Tesla's Solar Energy Products

The next part will discuss the businesses of the Solar Energy products from Tesla, including the two prime businesses with the energy storage business and the solar business. Firstly, the energy storage products are inclusive of Powerwall and Powerpack while Powerwall is gradually reserved for residential or at-home energy use; Powerpack has more storage than the Powerwall, designed for commercial use or electric utility companies. From Figure 35 with showing the growing energy storage in the U.S. market, the commercial and utility usage indicate to be installed more than the home one in the current 2021 and future. Figure 36 exhibits that Tesla's total energy storage in both

Powerwall and Powerpack deliveries had increased year over year until the third quarter of 2021. Moreover, the solar panel and solar roof as the solar storage business of Tesla in the U.S. market (Figure 37), we find that the main solar competitor for Tesla, Sunrun company, maintains its championship as the largest residential solar installer in the U.S from the whole period 2019 to 2020. This situation may give Tesla a threat while doing businesses in solar panels and roofs. Figure 38 displays that Tesla's total solar installations in both solar panels and solar roof deliveries were quite stable but had declined recently.

As a result, according to the overview of each Tesla Energy Product to make into the BCG matrix analysis (Figure 39), we consider Powerpack and Powerwall to be in both high market growth and market share (Stars quadrant) while Powerwall has a bit lower market share than Powerpack based on the information from Figure 35. However, the solar panel and roof are should be in medium market share but low market growth by placing them near the Dogs quadrant.

Fig 35. Growing US energy storage market forecast by 2024.

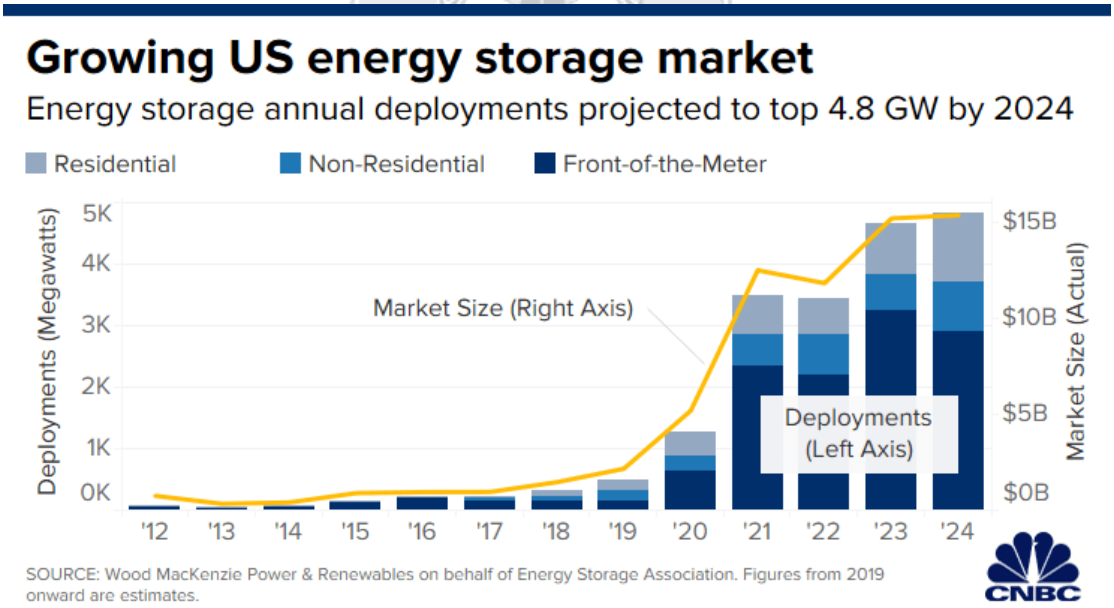


Fig 36. Tesla energy storage installation until the third quarter of 2021.

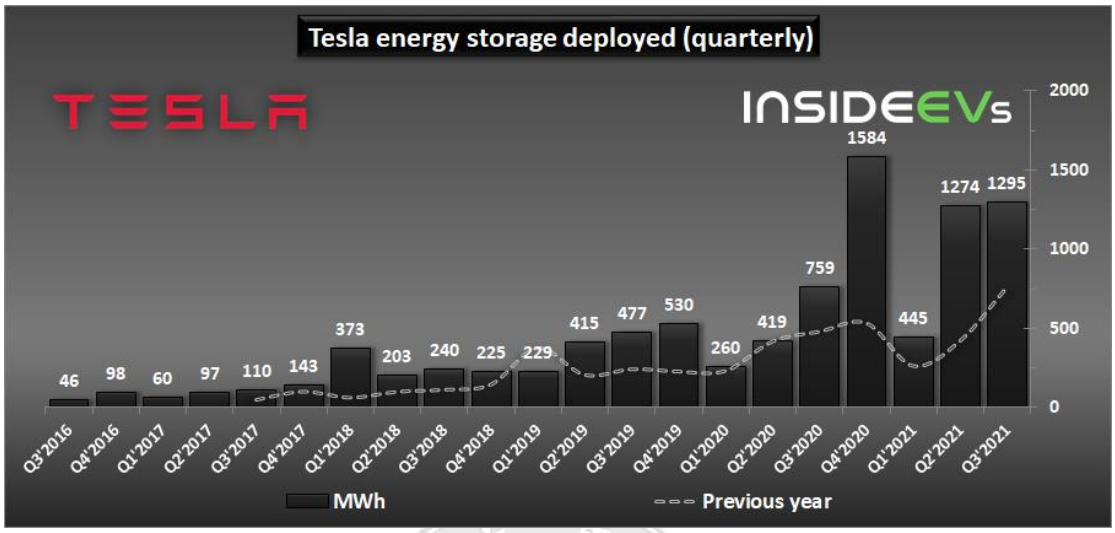


Fig 37. Top 10 residential solar installers market share by 2019 to 2020 quarterly.

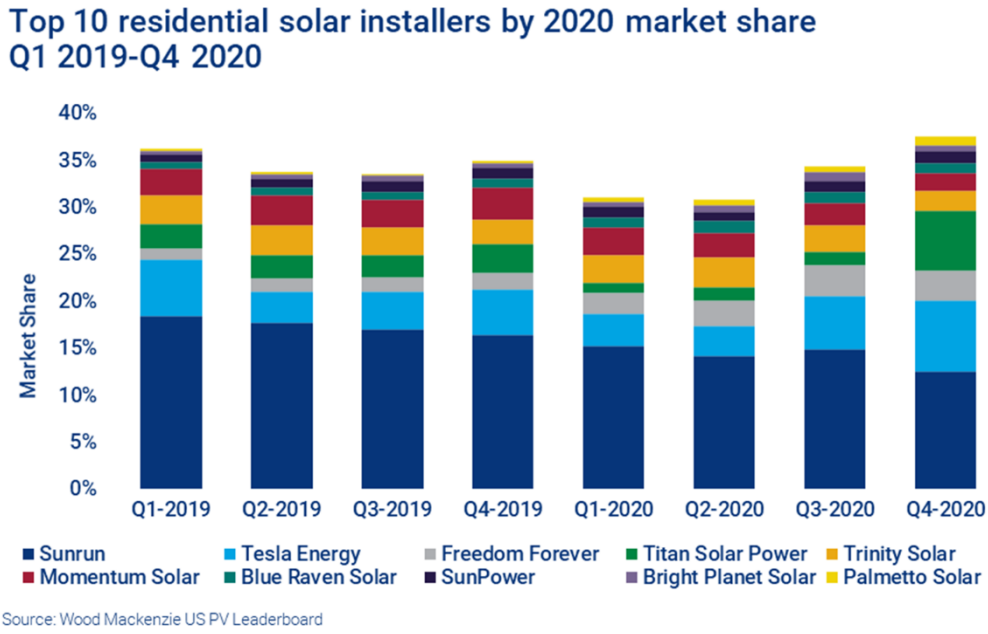


Fig 38. Tesla solar products installation quarterly until the third quarter of 2021.

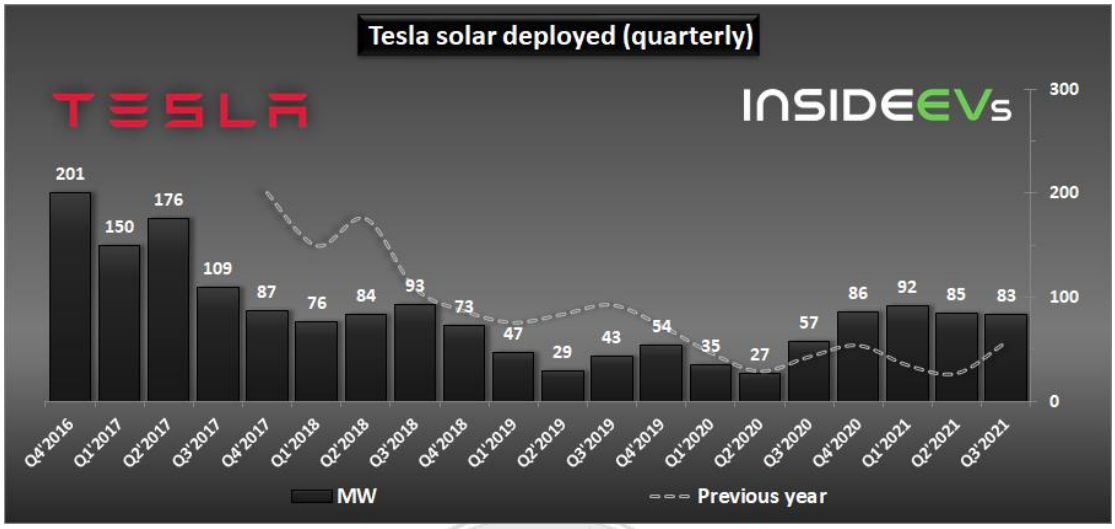
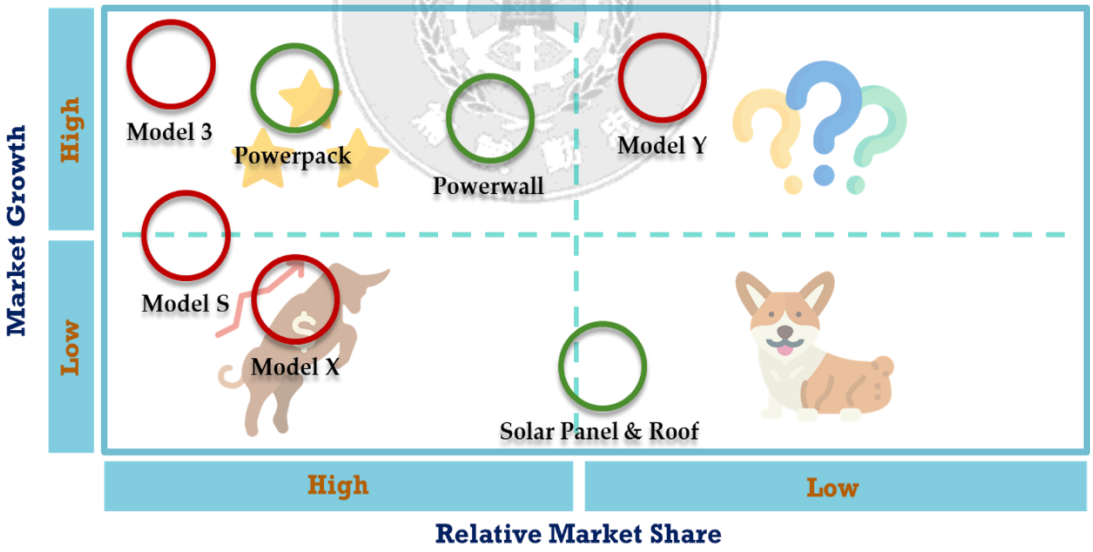


Fig 39. BCG Matrix Analysis
from the four main Tesla EV Models and three Solar Energy Products.



Chapter 13 Synergies among the SBUs

Tesla Inc. profits in various ways through synergies of its automotive and energy generation and storage segments. Especially through growth, financial, marketing and branding synergies as well as technological synergies both strategic business units are stronger and more profitable. For the growth, marketing and financial synergies, the energy strategic business unit profits more of the relationship than the automotive segment.

13.1 Growth Synergy

Due to increased demand for EVs, the market for energy generation and storage is also growing. Elon Musk strongly believes that demand for electric cars will increase over the next few years. This will also increase the demand for electricity to charge the cars.

One of the best benefits of an EV is that you can charge it at home, so more customers are also willing to install Powerwalls when they already have a charging station of Tesla.

By driving an EV, owners are also becoming more aware of sustainable energy, and they may want to use green energy for their homes, or perhaps even generate green energy themselves. Especially in California (US), Germany and China generating their own renewable electricity through solar panels is getting more and more popular. Some European countries are also giving tax reductions when people buy EVs and solar panels, which is another incentive to buy both.

Another point besides caring for the environment can be the fear of be cut of the electricity grid at blackouts (e.g., bad weather like a tornado in the US recently). That is another reason, consumers want to produce and store their own electricity, for instance, to be independent to charge their cars. That's why sustainable energy is becoming increasingly important.

“In long term, Tesla energy will be almost same size as Tesla automotive. Energy business collectively is bigger than the automotive business” – Elon Musk in 2020

13.2 Marketing Synergy

Tesla’s brand name is a big plus when it comes to customers interested in solar,

but hesitant to enter long-term contracts with unfamiliar solar companies (especially B2B customers). Everyone knows Tesla and knows who Elon Musk is, that can make a big difference for trusting in making business. Also, the product's design (both EVs and Powerwalls) both look elegant which gives recognition value.

Tesla Inc. does not have traditional marketing (no TV ads or newspapers) for both segments. Its strategy is also called "zero-dollar marketing strategy". The name is coming from its avoidance of paid advertising. What Tesla does is effective use of social media. Elon Musk as Tesla's face engages directly with customers on Twitter and Instagram, which generates lots of media attention and generally positive implications for the brand.

Also, many of the ads for the solar panels and solar roof pictures on Tesla's website and social media show a Tesla in front of the solar powered houses. This shows that the target group in the B2C sector are mostly customers who already own a Tesla EV.

Fig 40. Tesla's storage and solar system deployments with a house view.

Most of the Powerwall users also drive a Tesla EV. For sales acquisition Tesla's CRM system can contact (newsletter) existing EV customers to generate demand for the sustainable energy generation and storage.

Tesla's Marketing mostly happens through customer experiences and cross-promotional opportunities. In 2018 it had some referral programs for vehicle to boost the demand. For example, if you refer five people you get a Powerwall energy storage for free. Tesla ended its well-known referral program in September 2021 except for solar roof. Friends or family who order through the referral link can earn 500 USD for Solar Roof and the person who refers could get 500 USD. New referral programs are expected soon.

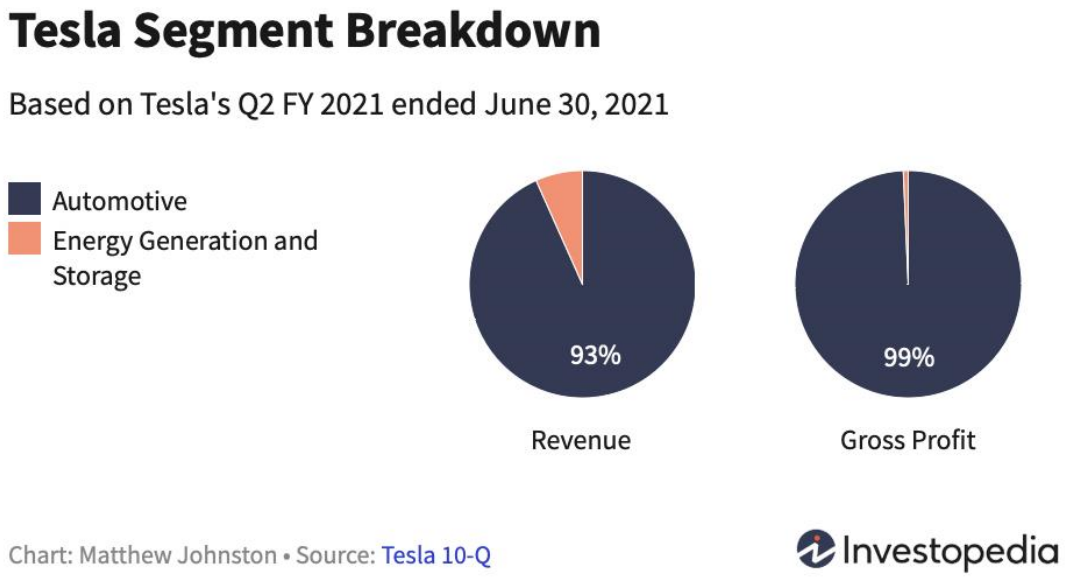
13.3 Financial Synergy

In 2016 Tesla bought Solar City for 2,6 billion USD. Musk had invested before in the company and two of his cousins worked for SolarCity. It was one of the largest solar installers in the US before. Prior to the acquisition, SolarCity took many loans to finance its growth, and was in 2016 so short in cash that they had to lay off 3,000 people (= 20% of their workforce).

The automotive segment had to pull the energy out of its debt. Especially shortly after the acquisition the energy segment profited of the revenue of the automotive segment to pay back loans. The revenue of the automotive segment is especially used for the R&D. Interestingly Tesla Inc. wasn't profitable through selling cars and energy products until 2020.

Today it's hard to judge the profitability of Tesla's energy business. In the last quarter, the automotive segment earned 93% of the revenue and 99% of the Tesla Inc.'s profit. In total, Tesla had 32,54 billion USD revenue per year. But even if 1 percent of gross profit sounds quite small, the energy segment's revenue is 1,99 million USD.

Fig 41. Tesla electric car sales made up the largest share of revenue in the middle of 2021.



The automotive segment clearly eliminated the risk and now the two segments are generating a higher revenue as they would have done without the synergy.

13.4 Technological Synergy (R&D)

Tesla Inc. profits by vertical integration. Especially for the battery production Tesla can profit from the R&D knowledge of its energy segment. The R&D departments are occasionally working together, for example researching on how to make the lithium-ion batteries for the EVs and trucks more powerful.

Also, around 1/5 of the 250 charging stations in California have solar panels from the own energy generation segment and use own electricity storages for the superchargers. In 2017, CEO Elon Musk said that Tesla plans to add solar and batteries to all Supercharger stations and eventually disconnect most of them from the grid in the future. In 2021 Tesla announced to use renewable energies in all its Supercharging stations by next year, so the energy SBU could be helpful with its energy knowledge and products to achieve this goal.

Chapter 14 Porter's Diamond Model Analysis

14.1 Factor Conditions (mainly for the U.S. market)

Key factors involve heavy, sustained investment, thereby creating competitive advantage as they are difficult to duplicate. The key factors are skilled labor, capital, and infrastructure. The non-key factors are raw materials and unskilled labor.

Most of Tesla's production is in the US:

- Headquarter in Austin, Texas (new factory soon)
- In the US, Tesla has its big factory with 10,000 employees in Fremont, California (EVs, majority of vehicle components).
- Gigafactory 1 Mass-production of batteries in Reno, Nevada
- Gigafactory 2 Manufacturing solar panels, solar roof, Powerwall, electrical components for Supercharger in Buffalo, New York (800 jobs)
- Gigafactory 3 Shanghai (EVs)
- Gigafactory 4 Grünheide (not operating yet)

Fig 42. 3D View of Tesla's Gigafactory 1

14.1.1 Natural Resources

These are the natural resources that Tesla Motors has access to in both its home nation and the countries where it has operations and manufacturing sites. This could include things like the presence of natural resources like water channels. Because of its position, a corporation has access to these natural resources, which are generally

affordable to develop. They don't need to be invented or manufactured initially, but they do need to be ready for widespread usage. E.g. in Grünheide (Germany) where Tesla is currently building its new Gigafactory, environmentalists criticize that Tesla reduces the already scarce water resources. The manufacturing plants need lots of water, that's why they are often built close to rivers (e.g. Texas Colorado River) (Carlson 2021). For their Gigafactory 1 Tesla put solar cells on the roof to use Nevada's sunny weather for their plant electricity. Tesla also gets a part of its lithium from a mine in North Carolina and wants to produce lithium from clay in Nevada desert.

14.1.2 Financial Resources

The financial resources accessible to Tesla Motors are one of them. These are available in the form of equity and loan for Tesla Motors. Internal resources and channels are used to generate the majority of the company's equity. Debt, on the other hand, is borrowed money from other people or organizations. In the US Tesla has easy access to loans from banks and other lending companies. Through loans more Gigafactories in other countries can be built, which are even cheaper. The factory site in Shanghai was completed with 65% less capital expenditure than was the case for the Gigafactories in the US with the same built-up area (Bryant 2021).

14.1.3 Human Capital (Advanced factors)

training programs and other investment programs Tesla Motors has in place for its global human resources and workers. It also encompasses all human resources operations geared at employee development and progress, from recruitment through performance management. Tesla is focusing on ensuring that its workforce is trained in advanced (technological) skills unique to Tesla's production processes, while also taking a proactive approach to safety, in order to support the ramp-up of car production. Scientific understanding allows to stand out of the competition. The US and Germany (e.g., Tesla's subsidiary Grohmann engineering automation) have scientific and engineering institutions that foster a highly qualified, knowledgeable, and productive workforce. This abundant supply of human resources enables constant evolution at a rate that competition would find difficult to match.

The education level in the US compared to the rest of the world is very high. Around 42% US-Americans have a college degree (Bryant, 2021). Especially in California, where Tesla created up to 51,000 jobs (also through supply chain), many

engineers and programmers of the tech-industry graduate from renowned universities. The US has also good work ethics. The presence of scientific knowledge will also result in frequent technological and non-technological innovation. Technological innovation is critical in assisting businesses in achieving economies of scale and lowering overhead and other operating costs so that they can profitably expand into new markets. For the production in Shanghai the labor is inexpensive compared to the US.

14.1.4 Infrastructure

For Tesla Motors, infrastructure is another crucial component that has aided the company's growth and expansion, not only locally but also globally. Tesla Motors has been able to operate successfully in numerous nations and markets because to its extraordinary infrastructure, which includes both a physical and technology network. Tesla exports their cars worldwide with big logistics like transport ships and trucks.

14.2 Demand Conditions

Demand conditions are the events and circumstances that contribute to a firm's performance in any particular market. Local demand is crucial in not only exposing a business to the problems of a larger market, but also in driving the firm towards expansion and expansion opportunities.

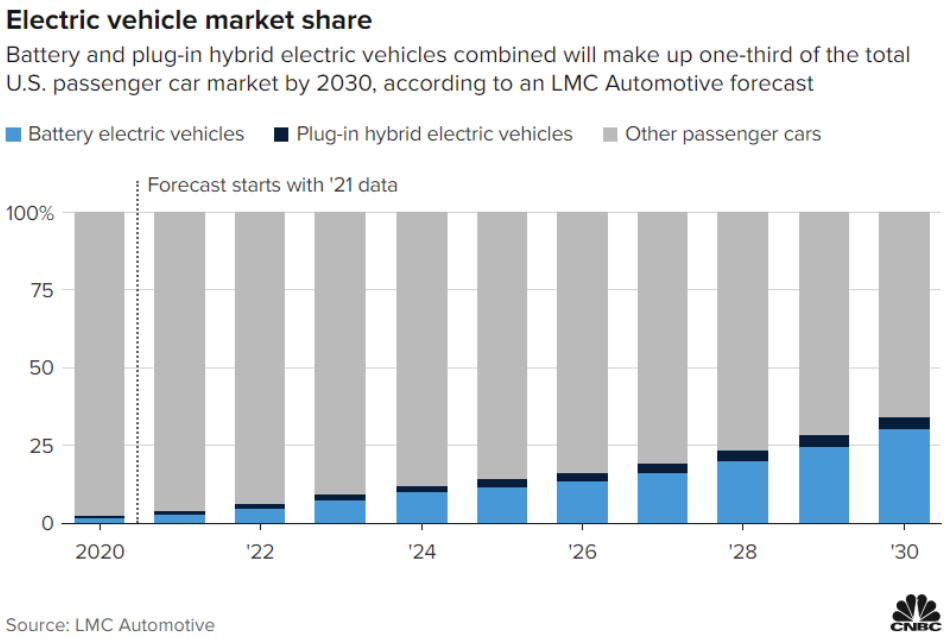
14.2.1 Size of the Domestic Market

Tesla's internationalization and expansion strategies have relied heavily on the size of the domestic market. This is due to two major factors. For instance, the expanded scale of local markets and domestic customers requires firms to grasp the dynamics at work in larger marketplaces, which allows them to strategize and plan operations properly. Because of the expanded market size and domestic participants, Tesla Motors has been able to assess and determine its own strengths and limitations in terms of growth, and to manage them accordingly. Second, a higher market size is vital for encouraging the business and brand to consider expansions and new markets.

According to a new study by accounting and consulting company KPMG, automotive executives believe that by 2030, more than half of their sales in the U.S will be electric cars, in line with President Joe Biden's EV sales objective. While estimates varied widely from more than 20% to about 90%, the survey on average that executives

expect 52% of new vehicle sales to be all-electric by 2030. Tesla is dominating the U.S market when accounting for the majority of EVs sold, including 79% in 2020, according to IHS Markit. Although U.S is an attracting domestic market, Tesla will slowly lose its pie because New EVs are planned as bigger automakers, such as General Motors and Volkswagen, convert to virtually entirely producing electric vehicles over the next decade or so.

Fig 43. EVs market share forecast in the US by 2030.



14.2.2 Demanding Domestic Customers

Sophisticated and demanding domestic sounders for Teslahave forced the company to use its resources for innovation, leading to the development of unique products for customers. Firms such as Tesla have been able to realize its crate and innovative capabilities and have used them to create products or processes to help the business expand, thanks to demanding domestic consumers. Tesla domestic customers are more demanding not only about quality, sustainability, eco-friendly, the feeling of technology-advanced but also with a reasonable and affordable price when driving such an electric car from a domestic EVs makers like Tesla and Model 3 is a successful answer to those market demands.

Fig 44. The deliveries of Tesla Model 3 in 2017-2018-2019 in regions.

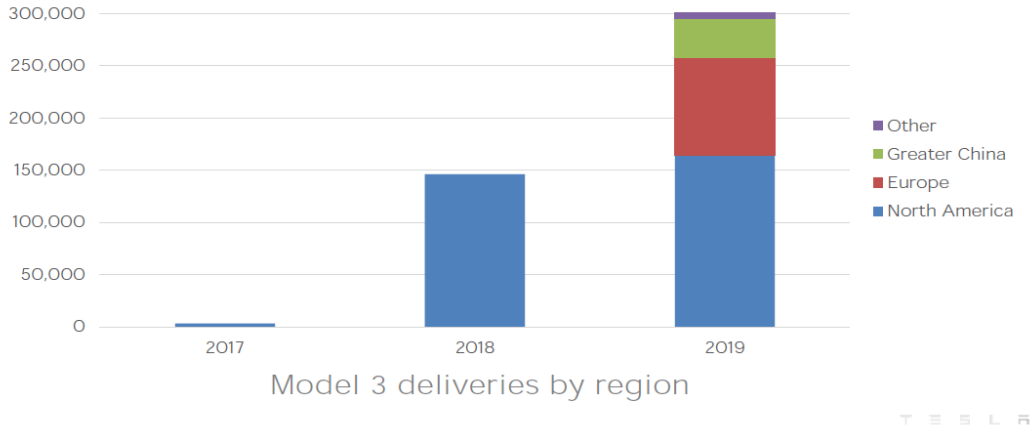
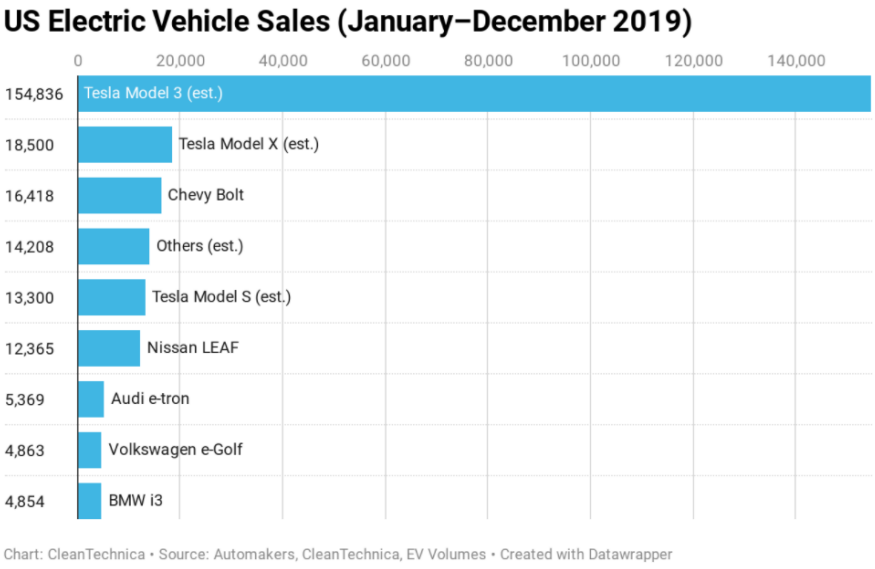


Fig 45. The deliveries of EVs sales in the US in 2019.



14.3 Relating and Supporting Industry

The United States ranks high in the Related and Supporting Industries attribute for the automotive industry. It is considered as the second largest automobile producer and seller in the globe. In the 20th century, the U.S. economy was directly driven by the number of new cars sold each year, and this is used as the economic indicator in the

country as well. Once there is a high amount of vehicle production, the job positions are created for their people, and this will generate a cluster of experts who are specialized in car manufacturing. Moreover, the automobile industry in the States also drives growth of the steel and machine tool makers because there is high demand in car components and parts.

Supporting industry in the national market not only will enhance the growth in a whole industry, but also allows Tesla's operation. For Tesla, even the company has a vertical integration, but they somehow need raw materials for their production. Having a lot of raw material sources available in the country will enhance the company's ability to reduce and control cost, get the economies of scale, and this trade would be another power to drive the country's economy. The cluster of experts in car manufacturing also existed and circulated in the labor market which will ease the company to get the specialized labor. In addition, Tesla cars are well-known as one of the most innovative cars in the world. The top five largest technology companies in the world are Apple, Microsoft, Alphabet (Google), Amazon, and Tesla which are all American companies. By being surrounded by a high technology environment, a large technology sector can facilitate the company to do their research and development, and this could be the reason why the company has never stopped investing in this part.

By being in the intensive competition and high technology environment, the rival industries have pressured the company to keep developing and perform better. Tesla can take these advantages in their own country and can use them to be the power to successfully expand to the international market.

14.4 Firm Strategy, Structure, and Rivalry on Tesla

While Tesla founded its initial business in the US, Tesla started with the unknown who put all itself in the brand-new and entire electric vehicle business. Nowadays, as a technology company focusing on energy innovation, the principal mission of Tesla is to accelerate the global transition to sustainable energy. With the unconventional method of doing business, Tesla stands out as a unique, successful, and well-known brand not only in the origin country but also in most countries worldwide.

14.4.1 Company Strategy

Challenging the status of doing business has always been the core of Tesla's company strategy. For instance, first, dedicated to entire electric vehicles business,

which is not hybrid vehicles. Tesla was founded on the purpose that electric vehicles can be better, faster, and even more environmental to drive than gasoline cars. This EVs' milestone has also certainly made a significant technical breakthrough by giving people more and more ideas and innovations participating in the EVs field. The next strategy should be the ownership of distribution, which is about the direct sales. Tesla does not operate with any dealers and distributors and does not sell through franchised dealerships. The only method is its official website, which decreases a bunch of transaction costs than other automotive manufacturers. The third strategy will be Tesla's "zero-dollar marketing". Instead of the majority of firms doing, Tesla does save lots of costs in marketing or promoting. As Tesla's entrepreneur, celebrity, and business magnate with a bunch of fans on social media, Elon Musk plays an influential role, who could impact most business matters even in the stock market. This is the most useful marketing strategy, which Tesla adopts to spreading sustainable energy concept to people around the world.

14.4.2 Company Organizational Structure

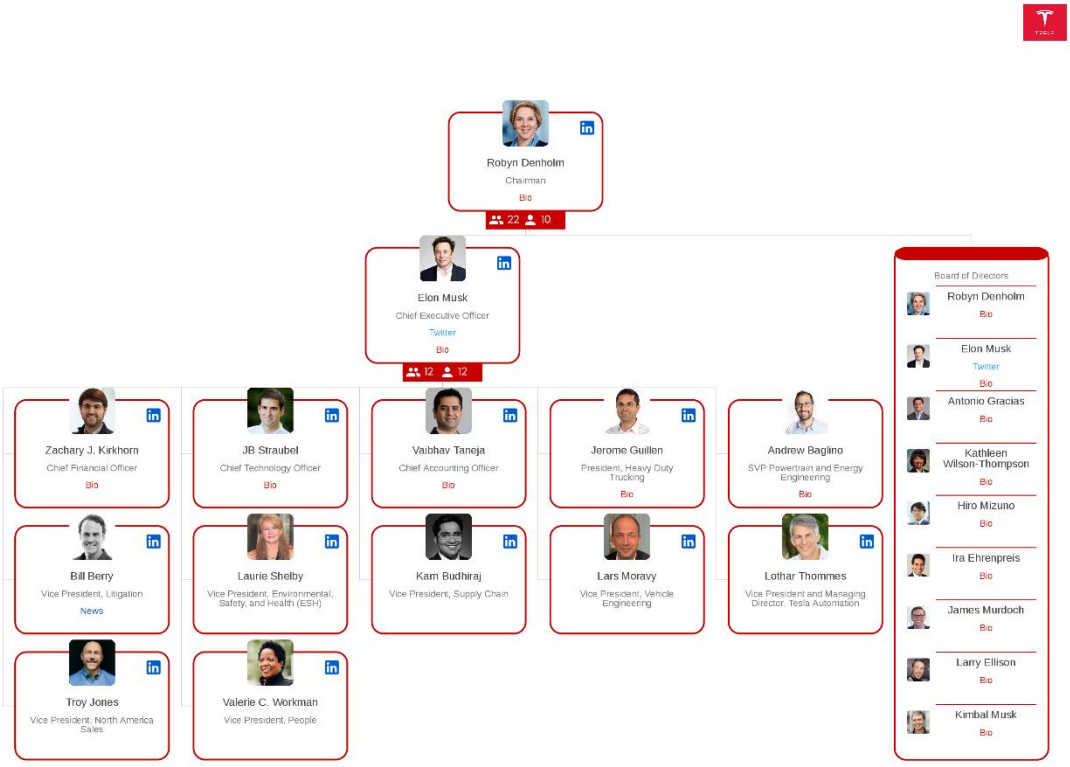
As a leading international manufacturer of one of the most beloved cars in the world, Tesla has had to adapt to balance between the need to market and sell with its efficient productivity and continuous innovation. For the corporate organizational structure from Tesla, the firm follows the U-form structure (U stands for unitary) with managing centrally as a single unit and relying on specialized functional lines for departmentalization.

The advantage of the U-form organizational structure could be impressed as the specialization, operational speed and clarity, and cost savings. Functional specialization boosts its productivity by allowing for a more efficient division of labor. While dividing the workforce according to various functional departments and responsibilities, this style of organizational specialization could speed up the production capability and make it easier for managers to assign tasks to the proper employees. Besides, the U-form structure fosters the expanded spans of management, where the supervisors and managers could supervise employees by centralizing authority. This benefit may bring down the cost for firms.

In Figure 46, these functional centers by covering all Tesla's business activities are inclusive of finance, technology, engineering, laws, ESH (Environmental, Safety and Health), supply chain, design, sales, and of course the offices of the chief executive officer (Elon Musk) to the top position of chairman (Robyn Denholm). As we can see,

this functional or U-form organizational structure of Tesla may show as divisional with supporting the company. This also makes processes to be simplified and strategic direction given from the highest levels of management with filtering their idea directly through the organizational structure to elementary employees.

Fig 46. Tesla's organizational structure.



14.4.3 Company Rivals

From the local competitors in the U.S., while Tesla continuously dominates the EV market, competitors are catching up to come into this growing market. This competition heats up promptly, and everyone would like to try to make a share in this EV pie. Based on the U.S. major and historic competitors for Tesla, they should include the two traditional automobile firms such as Ford Motor Company, the multinational automobile manufacturer founded in 1903, and General Motors, the U.S.-based automobile manufacturer founded in 1908. These traditional car firms keep developing their offerings not only in their original gasoline cars but also starting the field into hybrid electric vehicles as well as pure electric vehicles.

Moreover, on September 6, 2020, a U.S. electric vehicle startup, Lucid Motors, unveiled its first electric vehicle, the Lucid Air Dream Edition (Figure 47), which has

begun its selling on October 30, 2021. But why is Lucid Motors? It makes sense that this EV car company may pose a threat to Tesla: Lucid's CEO, Peter Rawlinson, is a former Tesla engineer who worked on the Model S, who also started its business in California (which has the same founded place with Tesla). Also, based on the information of this Lucid Air Dream edition electric car, it outperforms the Tesla EVs in terms of range. It could boost 100 more miles than Tesla's longest-range vehicle. Also, many of Lucid Air's other features, including charging rates, acceleration, and battery technology, can rival the performance of Tesla EVs and look to be direct competitors to Tesla. This oncoming rival could allow Tesla to impact its strategic development, focus on more and more vehicle fields, and evolve into a brand-new auto model.

Fig 47. Potential Tesla EV competitor - Lucid Motors' Lucid Air Dream Edition

When it comes to the global competition, in such an electric car growing market, Tesla definitely has a dominating lead, but it keeps gaining new rivals every day. By learning about many regional and international business methods and cultures, Tesla should be able to predict global trends and customer behavior patterns. Due to competitors catching up, Tesla will keep facing the increase of global competition as several newcomers, who are now also active in the EV field, including the global automobile manufacturers, such as Honda, Hyundai, Kia, Mazda, Volkswagen, and Volvo.

14.5 Government Conditions

This refers to how governments may impact firm performance and growth plans

through various regulations and border interactions with other nations on a global scale. Government regulations in many countries have been very favorable to Tesla.

14.5.1 Government policies

Tesla' development and growth strategies and opportunities have been supported by government policies. Tesla has received assistance from its home country in growing production capabilities, as well as assistance from other governments in establishing factories and securing access to import and export quotas for various areas. Furthermore, the government trade policies of several nations have aided Tesla in developing its operations globally... In Germany, the German government is planning a subsidy package that will provide over $1 billion in government assistance for Gigafactory Berlin, the company's new battery factory. In the United States, Tesla has profited from government initiatives aimed at increasing demand for electric automobiles and assisting businesses in adopting green technology. Buyers, for example, received $7,500 in federal tax credits for the first 200,000 Tesla vehicles sold in the country, an option that was rapidly depleted as consumers grabbed roughly $10,000 in total incentives in California.

14.5.2 Government as a catalyst

On several occasions, the government has served as a catalyst for Tesla. The government has aided Tesla' business operations and development objectives by acting as a catalyst. This has been performed, for example, by giving the company with infrastructural capabilities and benefits. The government has also been a catalyst in assisting the business to fulfill its demand, with its many internal consumer-related policies and regulations allowing Tesla to establish marketing campaigns and manufacture goods that satisfy the wants of customers locally as well as in other markets. Under President Joe Biden, The U.S government invests a $2 trillion infrastructure bill for the charging stations for electric vehicles for any brand. This is one of the support Tesla needs to develop and challenge itself to compete in the EV market.

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