

TESLA MOTORS: A CASE STUDY ONE STEP BEYOND

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In 2015, Tesla emerged to be the leading electric car manufacturer and was led by Elon Musk, an engineer, inventor, and visionary, whose personal vision was to accelerate the world's transition from a "mine-and-burn hydrocarbon economy towards a solar electric economy" (Tesla – Master Plan, 2015). In April of 2015, Tesla diversified and entered the private household segments, with offering the Tesla Powerwall, an energy storage solution for private use. Focusing on the commercialization of electric vehicles, Tesla aimed at launching the Model 3 as of 2017. The Model 3 was supposed to be priced at around \$35,000 and thereby affordable by broad masses. This competitive price was based on the large scale production of lithium ion batteries in the Gigafactory – a battery factory in Nevada / USA, operated through a joint venture of Tesla and Panasonic.

This case is a decision case in the field of strategic management. Based on a thorough analysis of the general environment, the industry environment, the financial situation of Tesla, and its competencies, the students should provide recommendations on how to pave the future of Tesla. In this respect, the students should take Tesla's diversification approach as well as its intention to commercialize electric cars into special account.

PREFIX

Electrical science has revealed to us the true nature of light, has provided us with innumerable appliances and instruments of precision, and has thereby vastly added to the exactness of our knowledge.

– Nikola Tesla

If it comes down to one person changing the world, it might be Elon Musk. He is not only the person that changed the way we pay our online purchases by co-founding PayPal, but also founded SpaceX with the intention not only to

commercialize private space trips but also to colonize new planets, paying special attention to the Mars as a first outpost of humankind.

Turning to the earth again, Tesla Motors, Inc. (short Tesla) was founded to offer electric vehicles that are able to outperform gasoline-powered cars – not only in terms of efficiency but also in terms of acceleration and driving experience. Whoever drove the Model S, knows about the feeling that overcomes oneself just by entering the spacious car and watching at the enormous screen in the middle of the cockpit. It simply feels like one-step beyond, one-step ahead of time - and your feeling is confirmed by accelerating the Tesla Model S to more than 60 mph in just less than 4 seconds.

While in most companies the hierarchical spearhead receives the biggest share of all wages paid, Tesla had to pay Elon Musk, despite his distaste, the “annualized minimum wage requirements” in accordance to Californian laws. Thus, Tesla’s “chief executive’s total compensation package in 2014 was \$35,360” (CNN Money, 2015).

The following case is about Tesla and a man who might change the world. Cross out the “might” if you like – we would. – The Authors

TESLA’S MASTER PLAN

Initially, Tesla intended to produce electric cars that were able to outperform gasoline-powered cars in both efficiency and driving experience. Named after Nikola Tesla (* 1856, † 1943), the inventor, electric engineer, and physicist, Tesla created the first lithium-ion battery operated car with a range per charge of more than 200 miles. In 2015, Tesla emerged to be the leading electric car manufacturer and was led by Elon Musk, an engineer, inventor, and visionary, whose personal vision was to accelerate the world’s transition from a “mine-and-burn hydrocarbon economy towards a solar electric economy” (Tesla – Master Plan, 2015).

When Martin Eberhard and Marc Tarpenning founded Tesla Motors in 2003 to commercialize electric cars, they were about to start their first big “Series A” round of funding. With insufficient financial resources, they intended to acquire Elon Musk, who was well known for his engagement in sustainable start-ups. Even before the “Series A” round of funding started, Elon Musk accepted the offer, led the venture capital funding, and co-founded Tesla with Martin Eberhard, Marc Tarpenning, Jeffrey B. Straubel, and Ian Wright.

In 2006, Elon Musk revealed Tesla’s “Secret Master Plan”, a chronological, four step strategy that defined Tesla’s action plan to accomplish the commercialization

of electric cars, charged with zero-emission electric power. Tesla's history is further explained based on Tesla's four step master plan.

Step 1: Build a Sports Car

Launched in 2006, Tesla's initial product was "a high performance electric sports car called the Tesla Roadster" (Tesla – Master Plan, 2015). It might appear ridiculous to start offering a sports car when the overall objective of Tesla was to commercialize electric cars by making them affordable to the broad masses. However, the Tesla Roadster (see Figure 1) served this purpose indirectly. While "any new technology initially has high unit costs before it can be optimized [...]" (Tesla – Master Plan, 2015), the plan of Tesla was to enter the sports car segment "[...] where customers [were] prepared to pay a premium, and then drive down markets as fast as possible to higher unit volume and lower prices with each successive model" (Tesla – Master Plan, 2015).

FIGURE 1:
Tesla Roadster 2011



*Note. Figure 1 – Tesla Roadster, Model cf 2011. Adapted from
<http://www.cars.com/tesla/roadster/2011/snapshot>, retrieved May 28, 2015*

The Tesla Roadster opened an entirely new segment – electric sports cars – and received the "Best Inventions 2006 – Transportation Invention" award. In addition, the Roadster sports car was well received by the male segment of the high net worth customers. The earnings of the Tesla Roadster were used to finance additional R&D activities, which ultimately resulted in the launch of the new model – Tesla Model S. However, by 2012, the Tesla Roadster was only sold 1,650 times (CoExist, 2015). Khobi Brooklyn, a Tesla representative, stated the following about the Tesla Roadster and its sales figures: "The Roadster accomplished everything we asked of it—it served as a catalyst for the EV industry, and it has allowed us to refine electric technology for future, and more affordable EVs" (CoExist, 2015).

Step 2: Use that money to build an affordable car

In 2012, Tesla launched the Model S (see Figure 2), according to Elon Musk, a “sporty four door family car at roughly half the \$89k price point of the Tesla Roadster” (Tesla – Master Plan, 2015). The announcement of the Model S was already given in a press release in 2008 and provided insights into specification of the new car. With a maximum range of 265 miles per charge and seven seats, the Model S focused on a broader target group. In 2013, the Model S became the top selling car in Norway.

FIGURE 2:
Tesla Model S 2013



*Note. Figure 2 – Tesla Model S, Model cf 2013. Adapted from
<http://www.teslarental-beverlyhills.com/tesla-model-s/>, retrieved May 28, 2015*

Tesla received several more awards with launching the Model S. The awards received from 2012 to 2014 can be referenced in Appendix 1. One of the most striking awards for Tesla as the new entrant to the automotive industry was the announcement of the Model S as the car of the year 2013. A review of Motor Trend, one of the most famous American automobile magazines, stated the following about the Tesla Model S when the magazine awarded the car to the “2013 Car of the Year”:

The Model S drives like a sports car, eager and agile and instantly responsive. But it’s also as smoothly effortless as a Rolls-Royce, can carry almost as much stuff as a Chevy Equinox, and is more efficient than a Toyota Prius. Oh, and it’ll sashay up to the valet at a luxury hotel like a supermodel working a Paris catwalk. – Motor Talk, 2013

In February 2012, Elon Musk unveiled the Model X, an electric sports utility vehicle (SUV). The production of the Model X (see Figure 3) had been postponed from 2012 to the end of 2014, in order to meet the increasing demand for the Model S.

FIGURE 3:
Tesla Model X 2014



Note. Figure 3 – Tesla Model X – Model cf 2014. Adapted from <http://www.caranddriver.com/tesla/model-x>, retrieved May 28, 2015

In 2015, there were already “more than 50,000 [Tesla] vehicles on the road worldwide [and] Tesla [was] preparing to launch the Model X, a crossover vehicle that enters volume production in 2015” (Tesla – About, 2015). The Model X was mainly characterized by falcon wing doors and enough space for three rows of seating.

Step 3: Use that money to build an even more affordable car

In July 2014, Tesla confirmed the launch of a new electric car – the much more affordable Tesla Model 3. Elon Musk stated the following about step 3:

In keeping with a fast growing technology company, all free cash flow is plowed back into R&D to drive down the costs and bring the follow on products to market as fast as possible. When someone buys the Tesla Roadster sports car, they are actually helping pay for development of the low cost family car. – Tesla – Master Plan, 2015

The third generation car, Model 3, was supposed to be 20 percent smaller than the Model S and supposed to cost only half as much (PopularMechanics, 2015). The Model 3 price estimation was approximately \$35,000 and should be available as of 2017. For Tesla, the launch of the Model 3 was supposed to be the capstone to commercialize electric cars. However, there was one more step in Tesla’s strategic plan to be taken.

Step 4: While doing above, also provide zero-emission electric power generation options

Tesla's mission was "to accelerate the world's transition to sustainable transportation" (Tesla – Gigafactory, 2014). Thus, to charge electric cars, there was a need for "green" electricity and sustainably produced batteries.

Tesla's Supercharger stations were mainly solar powered. A spokesman of Tesla stated that "in Europe, the power for all our Supercharger stations [was] sourced by renewable energy" (Daily Caller, 2015). However, there were some Supercharger stations in the USA that were powered by Diesel generators (Daily Caller, 2015). In order to provide zero-emission electric power, Tesla aimed at providing solar energy for all Supercharger stations.

In addition, Tesla started building the Gigafactory in cooperation with Panasonic based on a joint venture in 2014. This factory in Nevada, USA, aimed at producing lithium ion batteries in sufficient volume in order to "supply enough batteries to support [the] projected vehicle demand" (Tesla – Gigafactory, 2014). Tesla stated, that the production rate of their electric cars was to rise to a total number of approximately 500,000 cars per year in 2018.

DIVERSIFICATION AND SALES IN 2015

On April 30, 2015, Elon Musk introduced a new device to store energy in private households, the so called Tesla Powerwall. The "Powerwall [was] a home battery that [charged] using electricity generated from solar panels, or when utility rates are low, and powers [a] home in the evening" (Tesla – Powerwall, 2015). The Powerwall came in two versions, one with a capacity of 10kWh for \$3,500, the other with a capacity of 7kWh for \$3,000 (Tesla – Powerwall, 2015).

The sales of the Model S in the first quarter of 2015 increased to 10,030 car deliveries. Compared to the sales of quarter one in 2014, this was an increase of approx. 55%. This increase went hand in hand with satisfied customers. According to a customer survey in quarter one of 2015, 92% of the addressed 534,000 Model S owners, checked "the 'love it' box – the highest percentage of any vehicle covered in this survey" (Green Car Reports – Tesla, 2015).

Furthermore, Tesla invested in its Supercharger stations network to increase the freedom of travel for Tesla customers. The company planned to open more than 200 additional Supercharger stations in North America within 2015 (Chicago Tribune – Supercharger, 2015). Elon Musk stated that "we want people to have the same freedom of travel, a better one even than with a gas car" (Chicago Tribune – Supercharger, 2015).

The general trend towards environmentally friendly products, such as electric cars and light bulbs, became more and more important for businesses. Thus,

“environmental sustainability and carbon footprint occupies an increasingly important position on the corporate agenda around the world” (EcoMENA, 2015). One major concern of consumers was clean energy. The “deployment of renewable energy systems” (EcoMENA, 2015) played a major role in the trends of 2015 and was also subsidized by different governments, such as in Norway or Canada (Ontario, 2010). While Tesla offered Model S drivers nearly entirely solar empowered Supercharger stations, the production of lithium ion batteries was still questionable. However, the Gigafactory was also supposed to “be powered by renewable energy sources, with the goal of achieving net zero energy” (Tesla – Gigafactory, 2015).

Sources of Innovation

Tesla’s co-founder and current CEO was Elon Musk. Ashlee Vance, the author of Musk’s autobiography “Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future” stated the following about him:

A modern alloy of Thomas Edison, Henry Ford, Howard Hughes, and Steve Jobs, Musk is the man behind PayPal, Tesla Motors, SpaceX, and SolarCity, each of which has sent shock waves throughout American business and industry – Vance, 2015

Elon Musk, a visionary and inventor, not only (co-)founded Tesla, but also Paypal in 1999 and SpaceX in 2002. The foundations of these multibillion dollar companies proved that Elon Musk strived for excellence, setting ambitious goals for himself and his employees. He was a very demanding and challenging person and hired only the best talents for Tesla. Musk also encouraged a culture of innovation, which was characterized by the tolerance of failures to a certain extent.

The headquarters of Tesla were located in Silicon Valley. This allowed Musk to access some of the most innovative companies and skilled talents. The location also encouraged synergies with his own companies (e.g. SpaceX) and other firms that emphasized research and development. The major advantage of Silicon Valley was that the employees in this area were excellently trained, very ambitious and highly committed to their work.

Tesla cars came with a unique, future design and the features each car provided such as handling, acceleration, fit and detail, design and ride, were well received by consumers. Hence, Tesla won several awards throughout the years including the “2013 Motor Trend Car of the Year” and the highest rating ever with 99 out of 100 points from Consumer Reports (Hartung, 2015). Tesla designed its cars to compete with all automobile manufacturers leaving out the fact that it was an

electric vehicle. Other electric vehicle manufacturers focused mainly on small electric vehicles, which did not serve style and fun oriented buying behaviors. On top, Tesla's electric vehicles were the most efficient electric vehicles on the market with almost zero competition.

Tesla also provided a significant service level to its customers. The company built a large network of its Superchargers globally. In February 2015, Tesla announced, that it had "reached a milestone of 2,000 Superchargers worldwide, located at almost 400 Supercharger Stations in North America, Europe, Asia, and Australia" (Tesla – Blog, 2015). These charging stations were powered by solar energy and their usage was free for every Tesla owner. The extended network of these stations enabled free long distance driving and Tesla planned to even double the number of stations in 2015. Moreover, Tesla offered its customers an 8 year, infinite mile warranty on both the battery pack and the drive unit of the Model S.







The Redefinition of the US Automobile Manufacturing Industry

The US car and auto manufacturing industry was based on a few company groups, instead of a large number of individual companies. In February 2015, General Motors Corporation, Toyota Motor Corporation, Ford Motor Company, Fiat Chrysler Automobiles, Hyundai-Kia Automotive Groups, and Honda Motor Co. Ltd. were the main competitors in this industry. Ruiz stated the following about these companies:

The Big Three (GM, Ford and Chrysler) reported massive losses during the recession. The dismal performance of the Big Three eventually spread to the domestic internationals (foreign automakers with US plants, including Toyota, Nissan and Honda). – Ruiz, 2015

The distribution of market share based on revenue in February 2015 is referenced in Table 1 (following page). Tesla was not displayed in this figure, but with a continuously increasing market share of 4.5% Tesla was a rapidly growing player in the underlying industry. It was not only manufacturing electric vehicles, but also selling electric powertrain components for major players such as Daimler and Toyota.

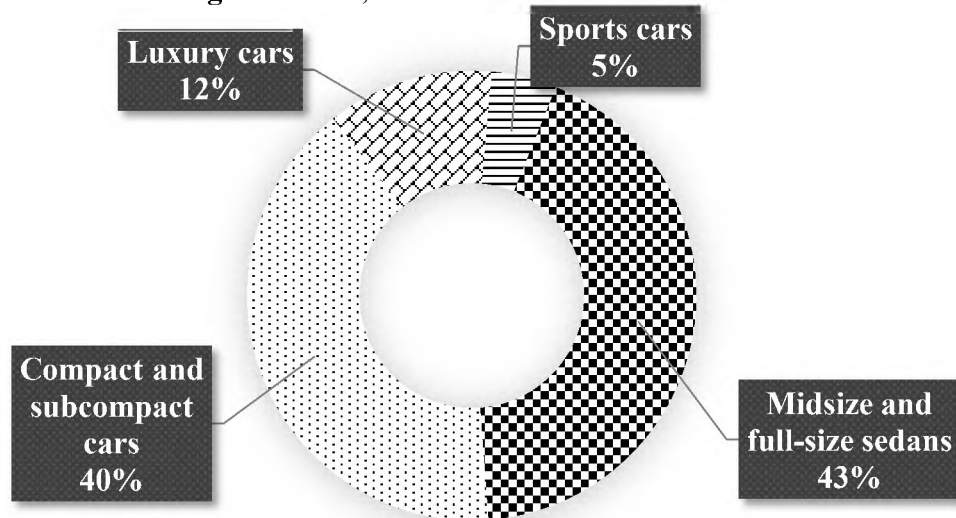
TABLE 1:
Market Share 2015

Company		Market Share based on Revenue in 2015
	General Motors Corporation	18.0%
	Toyota Motor Corporation	16.9%
	Ford Motor Company	12.9%
	Fiat Chrysler Automobiles	6.8%
	Hyundai-Kia Automotive Group	6.8%
	Honda Motor Co. Ltd.	6.6%
Other		32.0%

Note. Table 1 – Market Share in US Car and Automobile Manufacturing Industry. Adapted from IBIS World Report. 33611a Car and Automobile Manufacturing in the US Industry, Brandon Ruiz, February 2015

Between 2010 and 2015, the annual growth rate for this industry was about 5.4% and ended in a projected revenue of \$107 billion for 2015. The product and services segmentation did not include electronic vehicles, but categories like mid-size and full-size sedans, or compact and sub-compact cars. These accounted for the major portion of revenue and are depicted in Figure 4.

FIGURE 4:
Product and Services Segmentation, 2015



Note. Figure 4 – Product and Services Segmentation, 2015. Adapted from IBIS World Report. 33611a Car and Automobile Manufacturing in the US Industry, Brandon Ruiz, February 2015.

“Going green” was also a major topic automobile manufacturers had to deal with. While fuel prices remained high, the concerns for the environment had increased. More and more car manufacturers developed energy efficient cars and the trend of energy efficiency led to an increasing demand for hybrid and electric cars, to which the automobile manufacturers had to react quickly. They entered into strategic partnerships with experienced electric vehicle manufacturers such as Tesla (Ruiz, 2015).

Plug-in hybrid electric vehicles (PHEV) were estimated to penetrate the car and automobile market in the US, starting from a small market share of 0.6% to 0.9% in 2015 to nearly one fifth of the market share (22%) by 2030. It was assumed that electric vehicles (EVs) such as the Tesla models would account for a great portion of this share. Per definition, electric vehicles only ran on electricity, while PHEVs such as the Prius ran on both electric power and gas or fuel. Hence, even though the Prius was one of the best known PHEV models, it was not considered a direct competitor to Tesla’s models.

The obstacles for companies producing and selling PHEVs or EVs were e.g. battery pack costs, charging infrastructure, and competing technologies (BusinessTeacher, n.d.). In the electric vehicle segment Tesla was the leader, despite the fact that its cars were priced two to four times higher than other EVs.

In April 2015, Tesla led the sales figure of EVs in the US as shown in Table 2. Overall, about 6,037 EVs were sold in the US in April 2015, which equaled a take rate of 0.42% (HybridCARS, 2015).

TABLE 2:
U.S. Battery Electric sales for April 2015

Manu- facturer	Model	Sales 4/15	Sales 4/14	Difference %	YTD \$ Sales 2015	YTD \$ Sales 2015	Difference %
Tesla	S	1900	1222	35.7%	6800	5400	25.9
Nissan	Leaf	1553	1950	-25.6%	5638	7272	-22.5
Chevrolet	Spark	920	108	848.5%	1276	369	245.8
Fiat	500e	450	444	-1.4%	1889	2037	-7.3
BMW	I3	406	0	N/A	3087	0	N/A

Note. Adapted from HybridCARS, April 2015 Dashboard

Supply Chain and Partnerships

The car and automobile manufacturing industry was characterized by a large and complex supply chain that had to enable just in time production and delivery from suppliers. A close relationship with suppliers and good distribution channels were important and sometimes led to vertical integration, or joint ventures. Other supplying industries were e.g. the paint, iron and steel manufacturing, battery manufacturing, and automobile electronics industries. Especially the last two industries were extremely important for Tesla as EV manufacturer (Ruiz, 2015).

The dependencies on suppliers were also obvious in the cost structure of car manufacturers, where about 76.5% accounted for purchases in 2015. Generally, car manufacturers often acted as the last station in the supply chain, where the final assembly and design of vehicles was executed. Often, long-term relationships and contracts were transferred to intense partnerships or joint ventures (Ruiz, 2015).

When Tesla entered and changed the market for cars, many suppliers were not able or willing to tool up for the requirements and production which were required by Tesla. This led to losses, because more revenues could have been generated if the supply chain would have been efficiently aligned and fine-tuned. In this way, economies of scale were missed, which was also a reason for the high production costs and prices for Tesla models. In fact, the safety of having all parts available and running enough production lines to meet demand was one of the major issues Tesla faced. At the same time Tesla's longevity and the

satisfaction of shareholders was directly impacted by the success or failure of optimizing the supply chain (Forbes, 2013)

The supplier list for the Models S covered over 2,000 parts to be purchased from over 200 suppliers from all over the world, many of whom were the single source for certain components. To reduce (switching) costs, and be more flexible Tesla tried to obtain components from multiple sources whenever it was possible, but often only one supplier emerged as the only option and dictated the price, while Tesla dictated the required quality (SEC, 2012).

As mentioned earlier, Tesla was not only a manufacturer of EVs, but also a supplier of electric powertrain components for the major companies of the car and automobile manufacturing industry in the US. Through several partnerships, synergies for both partners were generated. The car manufacturers benefitted from the expertise and technology of Tesla, which in return received money and operating field to develop and expand its skill, knowledge, and product portfolio.

In different aspects of the business, Tesla collaborated with Daimler, Toyota, and Panasonic. In the beginning of 2008, the partnership with Daimler began with the sales of 1500 battery packs and chargers to support Daimler's European trial of the Smart ForTwo. The partnership with Daimler was intensified when they acquired a 9.1% stake in Tesla for \$50 million with the aim of developing battery technology. In 2014, Daimler sold 3.9% of its shares for \$780 million to continue the successful partnership with Tesla (TechTimes, 2014).

The partnership with Toyota started in 2010 when Tesla signed a deal of \$60 million to develop the powertrain for the RAV4 prototype, including battery, power electronic module, gearbox, and software until 2012 (Tesla – RAV4, 2010). Toyota was also one of Tesla's top shareholders, but in October 2014, when the Toyota RAV4 program with Tesla was near to its end after delivering about 2,500 units over more than two years, Toyota decided to sell some of its 2.94 million Tesla shares (Bloomberg, 2014).

The partnership with Panasonic was different from the others because this time Tesla purchased shares of Panasonic in 2010. Since 2008, Tesla and Panasonic collaborated to develop the next generation battery cells for electric vehicles, because Tesla was using Panasonic battery cells in its advanced battery packs (GigaOM, 2010). Out of this collaboration, the partners agreed on building a large-scale battery manufacturing plant in the United States, called the Gigafactory.

COMPETITION IN THE ELECTRIC VEHICLE MARKET

All major companies directly operating in the US, or only selling on the US market had tried to develop models that could serve customer segments which were growing due to the emerging green awareness and environment-consciousness. The first noticeable attempts were e.g. the plans of Daimler unveiled in 2007, to develop electric versions of its Smart car, for which Tesla should later deliver the battery packs and chargers. The major players BMW and Volkswagen also showed motivation to compete in the market of electric vehicles. BMW's brand Mini launched a test series of electrified Minis, while Volkswagen prototyped its Golf series.

In 2011, partners such as Toyota and competitors such as Nissan and General Motors, introduced their PHEVs like RAV4, Leaf, and Volt (also known as Ampera). Other car and automobile manufacturers such as Porsche and Audi also tried to compete with the Tesla Roadster. They knew that it would take months to be as popular as Tesla, which had a deeper and broader knowledge, as well as a solid feedback-base of real customers (Insideevs.com, 2014).

Considering its market share, Tesla did not seem to be a big competitor, but it was a very successful one. In 2015 Tesla competed in two main product segments: premium vehicles, and small premium vehicles. Tesla had four major competitors in both segments, which are presented in the following sections.

General Motors

The leader in the car and automobile manufacturing industry was headquartered in Detroit and had operated in 157 countries while employing 207,000 people. Brands like Chevrolet and Cadillac were well-known, especially in the US. In the fiscal year of 2014, GM made a global revenue of about \$155.9 billion. In 2011, GM took the step into the alternatively fueled vehicles by releasing the Chevy Volt, a compact car which used an unusual hybrid power train. It was 'unusual' because the power of the Volt was always supported by its electric motors, and the small onboard gasoline engine was able to recharge the lithium ion batteries. Despite the innovative technology, the initial sales of the Volt had not reached the projected goals, which led to a temporary production halt (Ruiz, 2015).

Toyota

For many years, Toyota Motor Corporation was the leading company of automakers operating in the US market in terms of revenue. While Toyota was headquartered in Japan, its North American operations were based in Torrance, California. With more than 300,000 workers in 50 manufacturing facilities, the

company managed to sell its vehicles in more than 170 countries. Toyota's global revenue of about \$256.4 billion was much higher than the global revenue for GM, but it was also obtained through all of its operating segments (Ruiz, 2015).

Toyota was one of the first movers with regards to mass-produced hybrid gasoline-electric cars. In 1997, it launched the Toyota Prius, which was a major success for Toyota. Beginning in 2014, Toyota offered its signature Hybrid Synergy Drive (HSD) technology for some of its cars and SUVs, as well as limited licensing arrangements, such as Nissan's Altima hybrid. Toyota was focused on the hybrid solution, and it was very successful in using technologies such as the regenerative braking, which means using the force of braking to help recharge the battery (Ruiz, 2015).

BMW

BMW was not a direct competitor of Tesla within the US car and automobile manufacturing industry due to the fact that the business model of BMW for the US market was based on exports, instead of manufacturing in the US. However, the models of BMW's i-series were one of the major competing products to the Model S of Tesla. BMW intended to enter the luxury, high-performance, low-emissions, and low-consumption markets and got into the mass production of its model i3 in July 2013. The whole all-electric series production vehicle was then available in 2014 with competitive prices in relation to Tesla. The marketing idea and brand slogan of the i-series was that this first line of EVs should deliver 'individual mobility', which was also made possible, because BMW built its own electric motors for its models (The Wall Street Journal, 2013).

Daimler AG

Daimler collaborated with Tesla in order to develop the batteries and charging units for Daimler's Smart ForTwo. At the same time Daimler was a big competitor with its Mercedes-Benz B-Class Electric Drive. Not only was the little B-class running on the new system to charge, also the very luxury SLS AMG Coupe E-Cell used the newest technology available for EVs (CarAndDriver, 2012). This luxury model had a travel distance of about 125 miles. The Mercedes B-Class F-Cell, which was in mass production since 2011, was able to drive a distance of up to 250 miles without charging (Daimler, 2012).

In contrast to GM and Toyota, BMW and Tesla were the only car manufacturers focusing on EVs. According to Dr. Thomas Weber, R&D manager of Mercedes-Benz, a bright future for EVs was predicted. He had the opinion, that EV technology would move in so fast that EVs would be, and especially EVs from

Mercedes-Benz (respectively Daimler), attractive for long distance travelers as well (Daimler, n.d.).

FINANCIAL OVERVIEW

Tesla's revenues increased tremendously from \$116 million in 2010 to \$3.2 billion in 2014 (see income statement in Appendix 2). In the beginning, Tesla focused on the sports car segment in order to sell the Tesla Roadster. The customers of this segment were willing to pay high premiums for luxury sports cars, and although an electric sports car was very uncommon at that time, Tesla earned a relatively high margin on this model, which it invested into R&D in return.

When Tesla launched the affordable premium sedan Model S in 2012, revenues increased dramatically in the following years. Nevertheless, Tesla generated a constant net loss throughout the years, with a peak of \$396 million in 2012. This peak was attributed to the high manufacturing costs of the Model S in 2012. However, the net loss in 2013 was one of the lowest in Tesla's financial history with \$74 million. During this year, Tesla focused mainly on establishing the new Model S and refrained from large investments.

Tesla continuously invested a great portion of its generated cash into R&D for new models and alternative energy sources. In 2014, Tesla invested a great amount of the \$1.9 billion (see balance sheet in Appendix 3) generated cash into the construction of the Gigafactory in Nevada, a factory that produced lithium ion batteries on a large scale (Tesla-Gigafactory, 2014). Hence, the financial situation and development was, as indicated in Tesla's Master Plan, predictable and calculated. However, the net income was supposed to become positive once Tesla commercialized the electric car segment, which went along with the launch of the even more affordable Model 3 and stepped out of its massive expansion phase.

Stock Performance

Tesla was listed as TSLA on the NASDAQ. It had its initial public offering in 2010 and was the first US automobile manufacturer going public since Ford in 1956 (Wired, 2010). On the day of the IPO, Tesla's shares closed at \$23.89 while they were initially offered at \$16 (Wired, 2010). This enabled Tesla to complete the initial public offering for \$238 million (Forbes, 2010).

In 2013, the year of the Model S, Tesla's stock price skyrocketed as depicted in Figure 5. The stock price reached its peak at \$291.42 in 2014. Investors were aware of the massive expansion and level of growth Tesla was exhibiting since 2010. Despite large net losses, they still bought the Tesla stock.

FIGURE 5
Stock price development TSLA



Note. Figure 5 – Stock price development cf Tesla from 2010 to 2015. Adapted from <http://ir.teslamotors.com/stockquote.cfm>, retrieved May 31, 2015

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APPENDIX

Appendix 1:

Model S Awards from 2012 to 2014



Note: Adapted from Clean Technica. How many awards has Tesla won? This infographic tells us. Received May 31, 2015 from <http://cleantechnica.com/2015/02/18/many-awards-tesla-won-infographic-tells-us/>.