

Tesla: internal combustion engine and electric vehicle



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Situation Analysis Tesla Motors incorporated is recognized as a leader in quality innovation for its electric powertrain engineering, performance and battery technology. Tesla was founded in 2003 with a conceptual thought of a fully electric, lithium ion powered vehicle that is eco-friendly, aesthetically appealing and a premier performance competitor. Their business plan was simple and had three steps. First, develop a high-end performance sports car to prove that electric vehicle (EV) were both cool and feasible and also can be produced economically.

Second, develop luxury sedan/SUV that would compete with high-end brands like Mercedes, Audi and BMW. Third, mass produce low cost electric vehicles to compete in general category. In 2004, the company raised initial venture capital, while designing their first vehicle, the "Roadster", later that year. Initially, the company was primarily funded by Elon Musk and other venture capital investors. The pooled funds fell short of the capital needed to fund the manufacturing facility and the latest Model S project. In 2009 Daimler bought preferred stock in Tesla for \$50M and in 2010 Toyota invested \$50M and Panasonic \$30M in stock options.

Three months after the Model S unveiling the Department of Energy announced in Jan 2010 that it would loan Tesla \$465 million to bring the sedan to market as part of the Advanced Technology Vehicles Manufacturing Loan Program, other major manufacturers received substantially higher loan amounts, Ford was awarded \$5.9 billion, and Nissan got \$1.6 billion. In 2010 the company acquired New United Motor Manufacturing Inc (NUMMI) factory in Fremont, California, which was developed as a joint manufacturing facility between GM and Toyota. It's a 5.5 million square foot plant and

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contains plastics molding factory, two paint facilities, 1. miles of assembly lines, and a 50-megawatt power plant . Tesla Motors Company is trying to transform the future of electric cars by providing new meaning to fully electric vehicles as not just only eco-friendly but also attractive and fun to drive. Most other companies tried and introduced all electric vehicles in late last century but none was able to mass produce it economically. Tesla Motors has sold over 2300 Roadster across the world, delivered its first Model S in June 2012 and is currently building its electric sedan at a rate of 80 per week rate (Sep 2012).

This vehicle completely set itself apart from its competitor with its efficiency, performance and technology breakthroughs. The company plans is to build 5, 000 by the end of 2012 and increase its production to 20, 000 cars in 2013. Being a small and startup player in electric auto industry, Tesla Motors has freedom to build the sales model from ground zero that's very untraditional. Forget traditional dealerships, their Tesla's main sales locations are in malls and their cars are delivered directly to customers. 2. 1 Market Summary Why electric vehicle?

Rising gasoline prices, depleting oil reserves, growing pollution, increasing environment awareness, is creating the market for clean and efficient vehicles. There's no doubt in my mind that in near future this will become the preferred mode of transportation across the world. Currently EV technology is at its infancy but commitment from government and manufacturer will soon take it to next level by building the infrastructure for next generation vehicles. 2. 1. 1 Market Demographics a)Geographics Tesla

Motors is a California based company that currently operates in North America, Europe, and Japan.

All sales are handled through its headquarters in North America, with brokerage service centers located in major metropolitan areas, such as Paris, London, Munich and Tokyo. Tesla has a minute number of stores, when compared to other automobile competitors. A large portion of Tesla's sales are handled online, which minimalizes costs, and adds to the company's overall efficiency. Shopping malls, in upscale city centers, in addition to affluent regions of the country that with have a high technological demand appreciate the latest technological developments, are among a few other key points the company considers when entering a new market.

With gas prices continuing to move upwards, Tesla's sale centers will most likely spreadfan to less populated regions as the demand for more economically efficient vehicle increases. b)Demographics Targeted customers are educated affluentrich males who are early adopters in their 30s, 40s, and 50s+ who are in market for performance sports car with pricing range \$50, 000 and up . c)Psychographics Environmentally conscious customers who want great performance car with zero tailpipe emission manufactured and assembled in U. S. d)Behaviors

Model S will provide customers the option who want alternative to traditional gasoline engine sports performance car with next generation technology. 2.

1. 2 Market Needs Electric Vehicle (EVs) technology presents a ready, viable and clear way to reduce our emissions. also tTheir design is very simple compared to other conventional gasoline power automobiles as they don't need traditional drive shafts and gear box to transform the power from <https://assignbuster.com/tesla-internal-combustion-engine-and-electric-vehicle/>

engine to wheel. EVs have electric motor directly coupled to drive wheels, which is powered by rechargeable battery packs.

EVs have some key advantages over internal combustion engines . •Electric vehicle efficiency is 3. 75 times that of internal combustion engine. •Eco-friendly as no tailpipe gases output. •Very smooth operation due lack of gear box. •Quiet driving experience. 2. 1. 3 Market Trends In 2011, the total sales of electric vehicles reached 18, 000, with the help of GM's Volt and Nissan's Leaf. When comparing the 2011 U. S. total sales for each electric vehicle manufacturer, with the 2012 sales forecast, the growth potential looks quite impressive.

Expectations are assumed to increase upwards to 300% year over year . According to “ Global & United States Electric Vehicles Market Forecast & Opportunities, 2017” the electric vehicle market will witness phenomenal growth in the near future . In 2011 total global revenue from this market was close to 54 Billion USD, showing some promise for environmentally friendly vehicles. For the most part, consumers are cautious when a unique product is introduced to the market. As more electric cars are introduced, consumer confidence will rise, assuming the quality is still maintained.

Tesla has a worldwide presence, which means economies, foreign and abroad, need be taken into consideration. The 2013 worldwide trend for auto manufacturing will be incorporating efficiency and connectivity in current and new vehicle models. Electric vehicle design and creation came in third on the auto industries radar. The economic conditions worldwide pose some risk to the automotive industry. When looking at GDP for developed market, aggregately, it has been on a declining more then increasing since 2006.

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With the contraction, comes a fiscal squeeze to the consumers' disposable income. In tangentConsequently, inessential items, such as performance electric vehicles, are put lower on consumer demand list. This section should include some information in all the subcategories listed. Demographic trends: Babyboomers have more disposable income than Gen X and Gen Y. There are lots of sources of that. Technological: Include some information about expensive technological innovations consumers have accepted such as iPads, LCD TVs, etc. While many people in the U.

S. are suffering from the effects of the recession, others are able to buy expensive technologies for their personal enjoyment. Cultural: Increase in environmental awareness. Lots of articles about that. Regulatory: Tax breaks for electric cars. Economic: Not everyone has been equally affected by the recession. The increase in the cost of gasoline provides an incentive to choose more fuel efficient vehicles. 2. 1. 4 Market Growth All major automakers are preparing to launch electric and hybrid vehicle in wide-range of categories in next five years.

The market for electric vehicle will be very competitive and depend upon economy and primarily on gasoline price. Model S fills a void in current luxury market for electric vehicle as currently there's no real competitive product out in market to compete that could match its performance, style and efficiency. Overall cost of ownership will definitely draw buyers from similar priced gasoline models from BMW, Mercedes and Audi. Model S looks out to be a successful product as company has sold out Model S production orders for 2012 year.

Projected market growth for next 4 years. Source: CSM Auto and J. P. Morgan

2. 2 Competition Tesla Model S is designed to position as high-tech luxury sedan car that deliver the sports performance without compromising its efficiency while maintaining zero tailpipe emission. Model S will also challenge the traditional dealership sales model as its based upon Apple retail approach that position the company as independent and innovative. Tesla will compete with all other EVs, hybrid and also gasoline vehicles in automobile market.

Overall in current luxury market its competitors will be Audi, BMW and Mercedes. While Tesla has no direct competitors at this time, some prestigious automakers have achieved remarkable levels of fuel efficiency.

You need to look at some of the German car makes such as BMW and Audi.

You should also see what electric cars are being planned for the future. 2. 3

SWOT 2. 3. 1 Strength's Tesla is currently one of the only high performance electric vehicles on the market, with exception to the Fisker Karma, allowing for the company to be first in line for consumers as well as investors.

Being that it is the first of its kind; the company has attracted a number of young, talented engineers, a highly qualified CEO, and a number of interested third parties. With a Department of Energy loan, helping subsidize its facility, and orders piling up, the company is not short on market orders.

Tesla has already established a worldwide presence with dealerships located in many of the major cities. The product itself is fully customizable, allowing each individual consumer to have a hand in the overall process at a price that rivals other premier sports vehicles such as Porsche, Mercedes and BMW.

2. . 2 Weakness's The company itself is young and thus holds some

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immaturity in the automobile market today. It has 24 locations in North America and an additional 14 worldwide . It plans to open an additional 10 stores this coming year with costs estimated at \$500, 000- \$1, 000, 000 depending on the market. One key disadvantage to the automobile maker is its unreliable cash flow. The current roadster model is too expensive for the average consumer, and in the current economic environment sales are essential. With additional capital flowing into store construction, future earnings could be affected downward.

The low availability of electric charging stations. 2. 3. 3 Opportunities The Model S is the next generation of Tesla Motors incorporated. The lower price point, starting at \$49, 900, is much more attractive to the average consumer. The Model S has opened additional doors for Tesla; on March of 2012, Athlon Leasing signed an agreement to purchase 150 vehicles for its inventory across Germany, France, Italy, Spain, Belgium and the Netherlands. Once acquired, 50% of Athlon's Model S inventories were immediately put on hold by their consumers .

Consumers today are more aware of their individual carbon footprint and are thus in search of a more sustainable option when it comes to vehicles. With future technology being smaller, faster and cheaper, we can expect the charge rate for the lithium-ion technology to improve, becoming more attractive to your distant commuter and or additional energy sources to be invented. As of now, there is a 300 mile cap on the new Model S. Assuming our economy continues to rely on foreign oil supply and not up our efforts in North America; the price of gasoline is expected to climb above and beyond inflation. INSERT GRAPH) As the cost of owning a hybrid, and or full

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combustion vehicle trends upward due to the gasoline variable, you'll see a shift from these vehicles to full electric due to the foregone opportunity. Tesla is also looking to develop additional models at lower price points. They have and SUV, the Model X, which isn't cheaper, but on the right track to consumer needs with expanding their inventory. Lastly, Tesla Motors incorporated not only looks to be branded by as an auto manufacturer, but also as a resource to other industry leaders.

It currently supplies electric powertrains to other automakers, including Toyota for its RAV4 Electric. It is also working with SolarCity, another company Musk has invested in, to supply batteries to back up WalMart's solar panels at 90 stores . 2. 3. 4Threats Other companies will be Tesla's biggest threat. With consumer demand continuing to grow for a low cost, fully electric vehicle option, it's only a matter of time before major auto manufacturers such as Ford, General Motors, Nissan, and Toyota enter the market. With visible market share already present, this poses a huge threat to Tesla's continued demand and thus bottom line.

The comparable expected production from these major automakers will be more expensive than average gasoline fueled vehicles, but all less than the Model S. Elon Musk stated, " We can show that it's technologically possible to other manufacturers. If Tesla doesn't make it I hope we have nonetheless served that purpose. I don't want to sound dour but it's definitely going to be a tough six months. " In addition, there are some possible downsides to using a fully electric vehicle. One, being if the Model S is left uncharged for greater than 11 weeks and the battery itself is rendered useless.

Not covered under warranty, this could pose some issues for major rental arenas such as airports, who do not have the charging capacity for their entire inventory. Once the battery is discharged, it is rendered useless and would need to be replaced in order for the vehicle to be fully operational. The costs to maintenance in replacing the lithium ion battery can be upwards to \$40, 000 per vehicle . Two, manufacturing and labor costs, inefficient production and high prices for parts, could shy investor and consumers from the company as a whole.

On that note, TSLA shares fell 9. 78%, after possible sale rumors surfaced, and ill production numbers hit for the third quarter 2012 for Tesla Motors incorporated. With this lowered guidance, expected gross margins could be impacted negatively due to the Model S delivery limitations. A total of 2, 700 to 3, 250 units are expected to be produced, down from the previous expectation of 5, 000. Consumers may find the inefficient use of capital a point of weakness in the young company, and thus hold off on purchases until Tesla maturity is rendered.