

Tesla Motors

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1 SWOT Analysis

Strengths

- Good engineering and technology research capability
- Able to raise large amounts of capital
- First mover advantage; the first company to offer a relatively practical fully electric car, customers include high-profile figures like Arnold Schwarzenegger, George Clooney, and Jay Leno
- Designs and builds many of the components in its cars, including the power electronics, motor and battery packs

Weaknesses

- Doesn't have much brand recognition among the general public
- A very small company with small sales volume, so no economies of scale
- Possible supply problems with components, especially if demand increases
- The Tesla Roadster hasn't been on the market for very long, the longevity of fully electric cars remains to be proven

Opportunities

- Moving towards the family sedan market and making a product that is meant for more of the automotive market
- Price of oil and gasoline skyrocketing, making the price premium for an electric car less of an issue
- Expanding into developing lithium-ion batteries and other energy technologies, partnering with a battery company to improve battery technology

Threats

- Wrightspeed X1, a prototype high performance electric car that caters to the same market; the only direct competitor to Tesla that offers a similar product
- Large automobile companies entering the market with full and hybrid electric cars, the GM Volt and Toyota Prius
- The price of oil falling dramatically in the short run
- A competitor having a breakthrough in related energy technologies, like hydrogen powered cars, natural gas, or ethanol

2 Six Force Analysis

Competitors

- WrightSpeed X1 – small two-seater performance electric car based on existing design, meant for enthusiasts rather than daily drivers

Entrants

- Large mass-market manufacturers (Chevrolet, GM, Toyota)
- Luxury performance sports cars (BMW, Porsche, Mercedes)
- Other boutique manufacturers (Italians, Aston Martin, etc.)

Rivalry

- Low; high entry barrier, market sector is niche and largely untouched

Buyers

- Individuals
 - Bargaining Power: Little, since demand is very high
- Licensees for EV technology
 - Bargaining Power: Unknown

Suppliers

- Battery Companies
 - Bargaining Power: Low, since Tesla buys Li-ion cells from many different manufacturers
- Engine Manufacturer (In-house)
- Chassis/Engineering (Lotus)
 - Bargaining Power: High, exclusive partnership, no clear alternative for current market
- Transmission (In-house, previously Magna)
 - Bargaining Power: Supplier failed, now production in-house
- Magna lawsuit [7]
- Patent license (AC Propulsion) [1]
 - Bargaining power: high, as Tesla develops motors, power electronics, etc. using AC's tech

Substitutes

- Hybrids (plug-in and otherwise)
 - Toyota FT-HS
 - BMW 1 and 3 series (mild hybrids)

- Small performance turbodiesels
- Small non-hybrid sports cars
 - Mazda Miata
 - BMW Z4
 - Honda S2000

Complements

- CAFE Standards – must be 35mpg fleetwide by 2020
- High oil prices – now at \$125/barrel
- Low electricity prices
- Solar/renewable power
- Dealerships/service centers
- Electric "gas stations", home power stations
- Tax/parking incentives – similar to hybrid tax breaks
- Battery technology

3 Analysis of Competitor Strategies

Toyota Motor Company

Tesla Motor's response to Toyota Motor Company's longstanding hybrid technology and possible entry into the plug-in hybrid and fully electric car market:

- Toyota's Prius first took the road in Japan in 1997, arrived in America in 2000, making it the most prevalent hybrid car.
- As of September 2007, 430,000 have been sold in the US alone
- Toyota's hybrid technology has been applied to a wide range of cars, ranging from the \$21,000 Prius to the Lexus flagship LS600h with a starting price of \$104,000.
- The LS600h, which is a large executive luxury car, falls in the same price range as the Tesla Roadster, though they serve very different purposes.
- The LS600h is meant to be a comfortable luxury sedan and still uses 20 miles per gallon because the hybrid power train is mated to a 5 liter V8 engine, which is far from fuel efficient. As a result, the LS600h is targeted at a completely different market than the Tesla Roadster.
- Tesla should be wary of Toyota offering a larger battery pack and a home charging station as options for the Prius, as this could eventually lead to Toyota offering a full electric version of the Prius.
- This would cut into Tesla's plans to offer fully electric sedans at different price points, the WhiteStar, priced at around \$50,000-\$70,000, and a more affordable BlueStar at around \$30,000 down the line.
- At those price points, Toyota can offer a fully electric sedan under Lexus to compete with the WhiteStar, and another fully electric version of the Toyota Camry, their bread and butter car for many years, to compete with the BlueStar.

- As a response, Tesla should focus on improving their technological advantage in fully electric cars so that by the time Toyota enters the electric car market, Tesla has a technological advantage.
- Also, Tesla with their first mover advantage should build their brand name to become as prevalent a name in the electric car market, as Toyota Prius, is in the hybrid car market.

BMW

Another potential competitor to Tesla is BMW, which continues to put effort into entering the luxury, high-performance, low-emissions, low-consumption auto market.

- EfficientDynamics
 - "Mild hybrid" technology
 - Uses many of the energy-saving elements of hybrid technology without electric motor assist
 - Small 4-cylinder gas and diesel engines
 - Regenerative braking
 - "Start-stop" system, shuts the engine off when not needed
 - BMW avoids marketing as "hybrid" since there is no electric motor
 - Used on the 1 and 3 series, which are BMW's lower-cost, small sedans/coupes
 - Lower cost, easily integrated into existing cars
- Hybrid technology
 - BMW demoed an X5 Diesel Hybrid SUV at Geneva Motor Show '08
 - BMW Vision EfficientDynamics
 - A prototype 36 mpg SUV, utilizing a solar panel roof and hybrid technology
 - 5 & 7 series hybrids on the horizon
- Hydrogen technology [2]
 - BMW Hydrogen7, a dual hydrogen/gasoline powered version of their luxury 7 series sedan
 - Only 125 miles on hydrogen, 300 miles on gasoline
 - "World's first hydrogen-drive luxury performance automobile"

GM

GM represents a significant future threat to Tesla, if, as planned, Tesla decides to enter the lower end of the market near the \$30,000 price point.

- The current development of the Volt, although it is not a true electric car, indicates that GM remains interested in the electric/hybrid car market, and will continue to pursue the market in the foreseeable future.
- A virtual waiting list surpassed 20,000 as of May 4, 2008, indicating that there exists a significant market for the Volt. [3]

- Currently the estimated first year output is about 10,000, but if the Volt proves successful, GM will be able to aggressively increase production due to the vast resources at its disposal.
- Designed for approximately 40 miles of battery powered driving before the 1.0L turbocharged gas engine automatically begins to recharge the battery, thus extending the range of the Volt to up to 640 miles of highway driving. This deviation from a strictly electric car solves the range problem of vehicles run purely on batteries, but advancements in battery technology could lead to the removal of this system in the future.
- The engine can be configured to run on gasoline, E85 or biodiesel.
- The E-Flex drive system being designed for the Volt represents an attempt to standardize many components, which would allow GM to take advantage of large economies of scale for possible future electric vehicles. In the case of significant battery technology improvement and increasing demand, GM would be able to quickly increase its production of electric cars and introduce new models with significantly less development.
- The Volt, with four passengers seating and a relatively attractive price of approximately \$35,000, appeals to a broad customer base, in contrast to the current niche market of Tesla.
- If Tesla were to enter the lower end market, it would without doubt face strong competition from GM. The only way for Tesla to compete effectively would be through differentiation, which would focus mainly on technology.

4 Conclusion

- Tesla is now faced with a question: Do they want to be a high end, low volume automobile marque like Porsche, or do they want to be a low end, high volume brand like Volkswagen?
- The other strategy that Tesla can consider is to position themselves to be bought out by a large automobile manufacturer, becoming their electric car division.
- Tesla wants to become a high end, low volume manufacturer, as that would allow them to stay alive in the current market.
- Since other, much larger automobile companies are positioning themselves to compete in the hybrid or electric car market, Tesla is likely to get muscled out of the market unless they distinguish themselves as the world's premiere electric car company.
- Tesla's best strategy is to carve out a niche out for themselves as the high end electric car maker and to sustain themselves on the same people who buy performance sports and luxury cars.
- Tesla's current plans to expand into the lower end of the market with a model priced around the \$30,000 range would require them to compete with GM and Toyota. Although Tesla currently has a technological advantage, both competitors have committed large amounts of resources to develop their technology and will be able to offer very competitive alternatives for the price range within a few years.

- The optimal option for Tesla would be to avoid the highly competitive lower end market, where they would be forced to compete on price, and to focus on their niche market.
- As planned, Tesla should introduce new models but should restrict itself to the \$60,000 and above price range, while continuing to build its brand as the luxury electric car company.

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