

# A Study on the Development of the Tesla Brand and Its Societal Impact

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## Abstract:

This study explores the development of the Tesla brand and its profound societal impact. As a pioneer in the global electric vehicle industry, Tesla has achieved remarkable advancements in technological innovation while attracting widespread social attention through its unique business model and marketing strategies. The study first analyzes the background and evolution of the Tesla brand and then discusses its societal impact from the perspectives of environmental protection, technological progress, industrial chain influence, and social responsibility. The results indicate that Tesla has expanded the global electric vehicle market, promoted the adoption of green energy, and shifted public perceptions of the automotive industry. Additionally, Tesla's branding strategies have inspired innovation and marketing approaches in other companies. Despite its success in sustainability and technological breakthroughs, Tesla faces challenges in labor management and financial sustainability. This study provides valuable insights into the future development of the electric vehicle industry and calls for companies to balance technological advancements with the fulfillment of social responsibilities.

**Keywords:** Tesla; brand development; electric vehicles; societal impact; technological innovation.

## 1. Introduction

Tesla's seminal contributions to the field of radio-frequency technology laid the groundwork for contemporary radio communications. He conducted pioneering experiments in the wireless transmission of electrical power, ultimately securing 112 patents for a diverse array of devices, spanning from speedometers to highly efficient electrical generators, and even a bladeless turbine that continues to be utilized in modern applications. In recent years, Tesla's influence on contemporary society has been paradigm-shifting, analogous to the Industrial Revolution. Their innovative electric vehicles and other pioneering products are continuously redefining societal norms [1].

In recent years, Tesla's influence has extended beyond the electric vehicle sector, driving a paradigm shift in contemporary society with its innovative products and technologies. Tesla has not only led the rise of the green energy vehicle market but has also had a profound social impact in areas like energy storage and autonomous driving. Its continuous innovation is redefining consumer habits and energy usage patterns, contributing positively to global sustainability efforts. Therefore, studying Tesla's development and its societal impact is of great practical significance. It not only helps to understand the interaction

between modern technology and societal changes but also provides a theoretical basis for future sustainable development models driven by innovation.

This study aims to conduct a comprehensive analysis of Tesla's brand development and its multifaceted societal impact. The research focuses on Tesla's performance in electric vehicles, clean energy technologies, and corporate social responsibility while exploring its influence on the global economy, environment, and society. Additionally, the study examines the success of Tesla's branding strategies and their inspirational impact on other industries.

This study employs a mixed-method approach, combining qualitative and quantitative research. First, through a literature review, the technological development and brand building of Tesla since its establishment will be systematically reviewed and summarized. Secondly, a case study approach will be adopted to analyze Tesla's representative projects across various sectors and their societal impact. Furthermore, survey data and analysis will assess public perception and acceptance of the Tesla brand, particularly in the areas of environmental protection, technological innovation, and corporate social responsibility. Through multidimensional analysis, this research seeks to reveal how Tesla has transformed industry landscapes through innovation and market strategy.

The primary objective of this study is to explore the far-reaching societal impacts of Tesla's brand development, especially in terms of the widespread adoption of electric vehicle technology, increased environmental awareness, and energy transition. By thoroughly analyzing Tesla's technological advancements, branding strategies, and social responsibility efforts, this research aims to offer new insights and practical references for the future of the electric vehicle industry and sustainable development. Furthermore, the study seeks to identify potential challenges Tesla may face in the future, encouraging a balance between technological advancement and the fulfillment of social responsibilities.

## 2. Accelerate the Tradition of Sustainable Energy

A sustainable energy transition necessitates a substantial increase in the reliance on renewable energy sources, such as solar and wind power, within future energy frameworks. Consequently, achieving a sustainable energy transition hinges on comprehending the levels of acceptance and adoption of these renewable energy sources by individuals, under various conditions. Furthermore, to augment the efficacy of sustainable energy systems and to satisfy the energy requirements of individuals and households globally, a reduction in the aggregate energy demand is imperative, particularly within developed nations. To this end, individuals may consider investing in energy conservation measures, including the renovation of dwellings and the implementation of energy-efficient devices. Given the intermittent nature of renewable energy resources, individuals may need to align their energy consumption with the variable supply. This can be achieved by implementing time-of-use strategies, either independently or through the deployment of automated technologies that regulate the activation and deactivation of specific appliances in response to the prevailing energy availability.

Tesla, an automotive manufacturer once poised as a purveyor of high-end, luxurious vehicles for the affluent, has meticulously endeavored to expedite the global transition towards sustainable energy - a vision central to the company's ethos. Acknowledging that the fruition of such an ambition exceeds the scope of a single entity, Tesla has taken the initiative to divulge its proprietary patents to the open-source community, thereby granting access to individuals committed to designing electric vehicles. One of Mr. Musk's initial objectives was the development of an integrated solar roof-battery system, which the company has successfully realized. Tesla, having been the pioneer in introducing solar roof tiles in 2015, premiered the third

iteration of its Solar Roof product in 2019. Crafted to mimic conventional roofing tiles, the system is priced at \$42,500 for a 2,000-square-foot dwelling [2]. Tesla encompasses three automotive segments, manufacturing luxury sedans, sport utility vehicles (SUVs), and a compact SUV. To cater to a broader consumer base, the company has launched a novel pickup truck model, the Cybertruck. According to Tesla's official website, the company asserts that the Cybertruck possesses unparalleled robustness and occupant safety, featuring a "virtually impenetrable" body structure. Despite its polarizing, avant-garde design, which is divisive among consumers, it enables Tesla to differentiate its truck offerings from conventional pickup manufacturers, such as General Motors (GM).

## 3. Buyer's Preference

The transportation sector, anticipated to experience growth at a more rapid pace than other industries, contributes over 25% of the world's carbon emissions [2]. Of the total emissions from global transportation, a substantial 70% is accounted for by road transport, which is overwhelmingly powered by conventional internal combustion engine vehicles (ICEVs) running on petrol or diesel, as noted by Wang and Ge. To decarbonize road transport and ameliorate greenhouse gas emissions, numerous countries are undergoing a transition to electric vehicles due to their status as one of the most efficacious alternatives to internal combustion engine vehicles in the reduction of carbon dioxide emissions [3]. In Australia, transportation represents the fastest-expanding sector and the third-largest contributor to emissions, trailing behind electricity and stationary energy sectors [4]. The transportation sector was responsible for 18% of the aggregate emissions in 2019, of which 80% were derived from road transport emissions [5]. In Australia, transportation ranks as the swiftest expanding sector and the third highest contributor to emissions, succeeding the electricity and stationary energy sectors [6]. The transportation sector was responsible for 18% of the aggregate emissions in 2019, of which 80% had emanated from road transport [7].

Tesla has consistently prioritized occupant safety at the core of its mission statement. The automaker's vehicles are equipped with a suite of sophisticated safety features, including automatic emergency braking, lane departure and collision warnings, obstacle-aware acceleration, and blind spot warnings, among other innovations. Nevertheless, despite the company's unwavering commitment to vehicle safety, it has not been immune to accidents. Two high-profile vehicle fires in 2013 posed significant challenges to Tesla's reputation, particularly as the company was finding its stride. Mr. Musk mounted a vigorous de-

fense of the automobiles, asserting in a blog post issued by the company that the likelihood of fire in the Model S is fivefold less than that of the average gasoline-powered vehicle. Tesla capitalized on the media's focus, highlighting the safety accommodations within the vehicle that were instrumental in ensuring the well-being of the two drivers. Regardless of the statistics, Tesla made an ethical choice by prioritizing both the safety of its customers and their peace of mind. The company equipped vehicle bodies with a triple underbody shield, thereby reassuring drivers. Not only do new vehicles come with a titanium underbody shield and aluminum deflector plates, but Tesla also generously offers to retrofit these shields to existing customers at no additional cost.

#### 4. Current and Future Opportunities and Challenges

Tesla achieved a market valuation equal to that of Fiat and half that of General Motors—a company that has produced over 450 million vehicles in its over-century-long history—in just ten years and with only 30,000 vehicles. Following the announcements of ambitious initiatives such as equipping cars with internet connectivity and constructing the world's largest “Gigafactory” for battery production, Tesla's market capitalization surged to \$30 billion. Going forward, one of the challenges that Tesla is poised to encounter is the realization that it no longer enjoys a monopoly as the sole player in the electric vehicle market. Numerous mainstream automotive manufacturers have now entered this space, with Nissan, Ford, Kia, Volkswagen, and Chevrolet each rolling out their respective lines of electric vehicles, encompassing a variety of styles and models. The Chevrolet Bolt, with a starting price of around \$37,000 and an impressive range of nearly 240 miles, emerged as a formidable contender to the Tesla Model 3 [8]. Additionally, the emerging automotive start-up Rivian is manufacturing an all-electric pickup truck, aiming to bring it to market by the early months of 2021. Concurrently with addressing ethical and managerial dilemmas, Tesla is continually enhancing its supply chain operations. The supply chain is delineated by two primary sectors: the “upstream” encompassing suppliers, and the “downstream” incorporating wholesalers and retailers. Tesla has allotted considerable resources to bolster its upstream segment, particularly centering on the in-house production of battery cells and vehicle manufacturing within its Gigafactories, which constitutes a significant competitive edge for the company. In the downstream sector, Tesla employs a distinctive retail distribution model that sets it apart from its competitors. The company conducts sales primarily online, eschewing traditional

franchised dealership networks. Instead, customers collect their vehicles from Tesla-owned regional distribution hubs. Notably, Tesla showrooms serve exclusively as venues for product promotion, devoid of direct purchasing capabilities. Tesla has faced challenges in meeting delivery and production schedules, particularly with the Model 3, given that it marks the company's entry into mass-market car production. The company has attributed production difficulties to inefficiencies in its supply chain. Despite sourcing components from various parts of the world, Tesla aimed to integrate the manufacturing and assembly processes at a single location. In the year 2015, Tesla Motors Incorporated executed the acquisition of Riviera Tool & Die with the express purpose of streamlining the manufacturing process for the Model 3. Subsequently, within the same annum, the company divested itself of \$738 million worth of equity shares, thereby generating the necessary capital to finance multiple infrastructure initiatives. These endeavors encompassed the construction of a state-of-the-art battery manufacturing facility and the development of an additional production plant. Thereafter, in 2016, Tesla commenced the production of solar cells and solar power modules at its Gigafactory 2, strategically located in Buffalo, New York. The company installed additional production lines to facilitate the manufacturing of electrical components for the Supercharger network and energy storage solutions, thereby generating approximately 800 new employment opportunities. Tesla has committed to generate 5,000 jobs across New York state by the year 2027. Following numerous enhancements to the supply chain, the company achieved its target of manufacturing 5,000 Model 3 sedans per week in 2018.

The statement provided discusses the emergence of a new market segment for high-end electric vehicle (EV) owners with the introduction of Tesla's Model S in 2012. The Model S, priced between USD 70,000 to 105,000, offers a driving range of 270 miles or 434 kilometers. The context suggests that the hypothesis put forward by Hardman et al. is that Tesla's entry into the market with this high-priced EV created a distinct group of early adopters, different from other EV owners [8]. The researchers surveyed 340 EV owners, examining whether there were discrepancies between the two categories of early adopters, categorized as high-end (primarily Tesla owners) or low-end (predominantly owners of non-Tesla EVs), and their perceptions of their vehicles. It was noted that both groups had a comparatively low representation of females; individuals in the high-end adopter group had higher levels of education and were older than those in the low-end group; despite both groups exhibiting high-income levels, the high-end adopters had significantly higher incomes than their low-end counterparts. In terms of satisfaction, high-end adopt-

ers perceived their EVs to be superior to ICEVs, whereas low-end adopters viewed their EVs as having drawbacks, including limited range, longer refueling times, and higher purchase prices, in contrast to ICEVs.

### 5. Impact of CEO Personality and Social Media

Elon Musk's charismatic demeanor and engineering prowess have been instrumental in establishing an innovative brand image for Tesla, which he has propagated through his diverse business ventures. Nevertheless, recently, certain actions undertaken by Musk, particularly his social media communications, have sparked debates about the impact of his association with the company on its value. Elon Musk's charismatic demeanor and engineering acumen have played a pivotal role in fostering an innovative brand image for Tesla, which he has propagated through his diverse business endeavors. Nevertheless, recently, certain actions undertaken by Musk, particularly his social media communications, have ignited debates regarding the influence of his affiliation with the company on its market value. The market reactions are primarily driven by business events and market expectations rather than subsequent reporting by financial news media. Additionally, social media accounts of high-visibility companies and personalities, such as Tesla and Elon Musk, have emerged as viable sources of market information for day traders and shareholders.

### 6. Conclusion

Tesla's influence on contemporary society is paradigm-shifting, marking the advent of an unprecedented era. Tesla is not merely an automotive company; it has profoundly transformed various aspects of daily lives through its electric vehicles, energy products, and autonomous driving technologies. From household energy management to environmentally friendly transportation, Tesla's offerings have seamlessly integrated into the modern lifestyle. Tesla's achievements are not only reflected in its products but also in its substantial contribution to global environmental sustainability. Tesla's renewable energy strategy, including solar energy and energy storage technologies, has provided strong technological support for environmental causes. The widespread adoption and

application of these technologies are driving society toward a low-carbon economy and reducing dependency on traditional fossil fuels. Furthermore, Tesla's space exploration ventures, such as SpaceX and the Starship project, demonstrate humanity's ambition toward outer space, opening a new chapter in space exploration. These innovations have a profound impact on the future development of technology, environmental issues, and understanding of corporate social responsibility.

Looking ahead, Tesla, as an innovation-driven company, has limitless potential. With continued investment in research and development, along with supportive policies, Tesla is poised to lead the way in clean energy, autonomous driving technologies, and space exploration. As global attention on environmental issues intensifies and technology advances, Tesla's technologies and business model may become the standard for future societies. In the coming decade, Tesla is likely not only to dominate the global electric vehicle market but also to further promote sustainable development and technological progress through its energy storage, renewable energy technologies, and space projects. In conclusion, as long as it receives adequate support, the future of both Tesla and humanity is bound to be even brighter.

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