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Analysis of New Energy Vehicles

— Taking Tesla as an Example

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Abstract: In the current context marked by a growing number of start-ups, the lack of clearly successful enterprises is not a random occurrence, but rather highlights complex underlying reasons that require thorough investigation. This paper undertakes an investigation focused on the case study of Tesla, integrating perspectives from the fields of business and economics to analyze the complex factors driving the success of innovative start-up companies. This study employs a comprehensive literature review method to emphasize the significant influence of departmental contributions in shaping tactics that foster success. This research not only enhances the comprehension of the strategic formulation process in present-day start-ups but also has the potential to act as a guiding reference for rising companies. Drawing on a comprehensive review of Tesla's trajectory, this research offers valuable insights to future start-ups, enabling them to develop strategies that are well aligned with achieving success.

Keywords: Tesla motors, electric vehicles, departmental strategies, SWOT analysis

1. Introduction

The current global trend in pursuit of environmental conservation and green ecology is centered around the development of the new energy industry. The establishment and advancement of the new energy automotive sector in China serves as a significant avenue for transforming the country's economic growth patterns and harnessing novel sources of economic impetus. In the past few years, the automobile industry has experienced significant transformations that are unparalleled in the last century [1]. There has been a remarkable surge in the adoption of electrification and intelligent technologies, leading to increased attention towards new energy cars and intelligent Internet-connected vehicles [2]. The prevailing focus in contemporary study pertains to the examination of Tesla's triumph, mostly achieved through the development of business models and the analysis of the company's strategic approach, drawing insights from up-to-date news sources. The majority of these techniques pertain to a particular department, however, there lacks a comprehensive study that thoroughly examines the factors contributing to Tesla's success by analyzing the unique qualities of each department and the company culture.

This study will utilize Tesla as a case study to examine the factors contributing to the emergence and success of start-up companies, employing a synthesis of business and economic principles. This study used a literature review methodology to examine the importance of departmental contributions

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in establishing effective strategies. This work is notable due to its extensive and anticipatory analysis. This study aims to provide a detailed examination of the methods employed by each department inside Tesla. By doing so, it seeks to contribute to the existing body of knowledge in the fields of Entrepreneurship, Business Management, and Economics, specifically in understanding the factors that contribute to the success of startups.

2. Step into Tesla

2.1. External Environment—Global Industrial policies towards the NEVs industry from the views of China and US

In the People's Republic of China, the Chinese government implements efforts to subsidize the production of lithium-ion batteries, with the aim of promoting enhanced cost competitiveness within the industry [3]. Furthermore, the Chinese government has demonstrated significant commitment towards the recycling of lithium-ion batteries and has implemented investment criteria for Zero Emission Vehicles (ZEV), so facilitating the growth of this industry. In relation to the new energy vehicle, the Chinese government initiated the new energy vehicle certification in 2017 with the objective of attaining the manufacturers' annual zero-emission vehicle (ZEV) reputation target of 18% by 2023 [4]. Additionally, various local Chinese governments have implemented measures to bolster ZEV sales, including time-limited purchase subsidies and charging rebates.

Consider the United States, the birthplace of Tesla, as an illustrative case. A significant proportion of states in the United States have implemented distinct policies pertaining to Neighborhood Electric Vehicles (NEVs), encompassing measures such as tax credits, buying incentives, and support for the establishment of charging infrastructure. California has implemented an Executive Order mandating that all newly sold automobiles must be zero-emission vehicles by the year 2035. States such as New York, New Jersey, and Massachusetts are contemplating comparable prohibitions on internal combustion engines. Regarding the issue of charging, California has established the Lithium-ion Car Battery Recycling Advisory Group with the aim of formulating policies pertaining to the reuse and recycling of batteries at the end of their lifecycle [4].

2.2. Internal Environment—Departmental Contributions

2.2.1. Financial Department

The initial public offering (IPO) of Tesla in 2010 had a crucial role in its subsequent achievements [5]. Tesla made history by becoming the inaugural publicly traded electric vehicle manufacturer in the United States through this groundbreaking initiative. The presence of the initial public offering (IPO) continues to exert influence on Tesla's current operations. The act of making Tesla a publicly traded business has the potential to not only enhance its brand awareness but also augment its brand recognition. Additionally, it has the potential to enhance employee motivation and foster increased enthusiasm towards their professional responsibilities. The aforementioned beneficial benefits have significantly enhanced the competitiveness of Tesla's brand.

In addition to the aforementioned approach, active participation in a capital-intensive sector such as the automotive industry necessitates Tesla's heightened focus on securing more funds from investors to facilitate the exploration and advancement of cutting-edge technologies [6]. In order to fulfill its objectives, Tesla must engage in daily precise financial forecasting, budgeting, and analysis to inform strategic decision-making, hence ensuring investor confidence [5]. One positive aspect is that Tesla's financial department demonstrates great proficiency in doing these tasks.

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2.2.2. Human Resource Management

Based on the extant body of research, the majority of evaluations pertaining to Tesla's human resources department are characterized by high levels of acclaim. According to Aybaly et al., Tesla has emerged as a significant driver of capital creation for employment, garnering recognition as a highly esteemed workplace. In fact, Fortune magazine has bestowed upon Tesla the prestigious title of "America's Best Employers 2019" [3]. The media's extensive acclaim can be attributed to a specific rationale. Firstly, it is noteworthy that Tesla's human resources department possesses the ability to strategically forecast its trajectory, recruit exceptional individuals, and cultivate a work environment that fosters inventive practices within the domains of engineering, manufacturing, and software development [5]. Furthermore, the ability to attract and keep a highly skilled personnel is a significant contributing factor to the success of Tesla. Tesla provides its employees with substantial pay and bonuses that are contingent upon both individual success and year-end performance. In addition to financial incentives, non-financial aspects such as job enlargement, job enrichment, and empowerment may also be incorporated as supplementary components [1].

It is worth mentioning that Tesla's HR department is more inclined to select talents who match the vision of the company's CEO, Elon Musk. The interweaving of such personal culture and company culture will undoubtedly make employees' work full of efficiency, and the sense of belonging like going home will be extremely strong. Elon Musk’s vision includes sustainable development and possessing the skills necessary to develop and market innovative products. He states that creating a culture of innovation and environmental consciousness is a vital thing for achieving success [1].

2.2.3. Marketing Department

Tesla is more competitive due to its marketing department's successful strategy implementation. General Marketing. First, Tesla uses aggressive, friendly direct sales methods through company-owned shops. Tesla's goal is to deliberately target global vehicle markets by building a large network of retail and service stores [2]. Tesla's products have improved dance NEV safety and mobility. Tesla also posts about product advances and electric vehicle subsidies on social media. Tesla cars have strong brand equity and are often considered trendy [3]. Tesla also uses word-of-mouth marketing and media coverage to maintain its strong brand. One of their strategies is exploring joint marketing with Apple Corporation to boost brand image and audience reach [5].

To enhance Tesla's market positioning, a non-traditional strategic and marketing approach can be implemented, emphasizing the company's high-tech nature. The recommended strategic approach consists of three steps. Firstly, the introduction of low-volume high-price sports cars, specifically the Roadster. This should be followed by the release of mid-volume mid-price luxury sedans, namely the Model S and Model X. Lastly, the strategy concludes with the manufacture of affordable mass-production vehicles, specifically the Model 3 [2]. Tesla's products has a distinctive selling proposition (USP) that stems from their utilization of artificial intelligence (AI) and big data in creative ways. The Autopilot system is an exemplary illustration of Tesla's advanced technology, demonstrating its capability to predict and execute track planning [6]. The aim of Tesla's desirable design is to create a sleek design with an all-aluminum lightweight body for the Model S. The marketing department abandoned the conventional ICE layout and mounted the battery pack on a large rigid and flat floor, resulting in a low center of gravity and good weight distribution. The department also incorporated a lot of innovation from the IT sector, introducing features such as an electronic dashboard and a 17" touch screen [7].

In summary, Tesla's marketing success may be attributed to its adoption of a sustainable approach, utilization of cutting-edge technology, and implementation of an appealing design. Tesla's advertising effectively articulate their corporate social responsibility (CSR), which in turn has the potential to

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broaden their client base. This may attract environmentally conscious individuals who are inclined to purchase their products.

2.2.4. Operational Department

Tesla's core production strategy is to simplify production processes and scale up production to build a Gigafactory. Among them, advanced robotics, automation, and lean manufacturing principles have all been applied to production [5]. Furthermore, Tesla encountered manufacturing obstacles with the introduction of the Model X, underscoring the need of streamlined processes in achieving prosperous product launches [3]. In addition, Tesla has consistently relied on strategic alliances to enhance its production capacity and processes, not solely for economic purposes, but also to facilitate the exchange of information and expertise. A further cooperative arrangement was established with Panasonic. The Japanese cooperation serves as both the primary supplier of battery packs in the long term and a collaborative partner in the jointly planned Gigafactory project, which entails the establishment of a large-scale battery research and production facility in Nevada, USA [6]. Consequently, Tesla has the potential to employ these tactics to establish collaborative alliances with counterparts that share common interests in innovation, design, and sustainability.

2.2.5. Research & Development

Since its inception, Tesla has been characterized by its strong emphasis on innovation and its team of highly experienced engineers. This can be attributed to the efficient recruitment practices implemented by the Human Resources department. Tesla aims to supplant the conventional internal combustion engine (ICE) by introducing an electric powertrain [6]. The expertise of the company is not limited to its own vehicles, but is also shared with other automobile manufacturers such as Daimler and Toyota. This collaboration involves the provision of engineering services and the supply of components, thereby facilitating the long-term objective of electrifying their respective vehicle models [6].

In her scholarly publication titled "Green is the New Black," Mauer categorizes luxury consumers into four distinct groups: aspirational consumers, status consumers, experiential consumers, and absolute consumers [7]. According to her viewpoint, absolute customers refer to affluent individuals who prioritize the acquisition of genuine luxury goods and services. These consumers are not drawn to brand logos, but rather to exclusive, top-notch products and experiences. In order to achieve genuine sustainability, it is imperative for Tesla to focus its efforts on targeting conscientious consumers who possess significant influence and serve as role models, as elucidated by the author. Elon Musk comprehends this concept and, in order to cultivate a demand for his electric vehicle and optimize his likelihood of achievement, he has devised an intriguing automobile that caters to the requirements and aspirations of precisely this demographic of buyers, namely influential innovators situated in Silicon Valley (such as executives at Apple or Google) [1].

2.3. SWOT Analysis for Tesla

Table 1: SWOT analysis for Tesla (original).

SWOT Analysis	Helpful to Achieve the Objective	Harmful to Achieve the Objective
Internal Origin	Strengths	Weaknesses
External Origin	Opportunities	Threats

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As shown in table 1, the SWOT analysis comprises four dimensions for assessing internal strengths and weaknesses as well as external opportunities and threats, serving as a crucial tool to scrutinize factors that could shape a business's future trajectory. As per the findings of Kumari and Bhat, an exploration into the case of Tesla reveals distinctive strengths, notably underscored by its well-crafted departmental strategies and the hallmark of high-quality product manufacturing. For instance, Tesla's strengths in high-quality products could be exemplified by its cutting-edge electric vehicles equipped with innovative technology, superior performance, and exceptional safety features. On the other hand, Tesla presents a number of weaknesses that merit consideration. These comprise complex industrial processes, limited supply chains, and production deficiencies. The intricacies linked to Tesla's manufacturing processes can be exemplified by instances of difficulties in expanding production and guaranteeing consistent quality throughout its diverse lineup of electric automobiles. The concept of limited supply chains can be further understood by examining potential bottlenecks in the procurement of components like as batteries or electronics, which could hinder the timely production process.

In summary, the Tesla case exemplifies a complex interaction between several strengths and weaknesses that influence its location within the electric vehicle industry. The presented SWOT analysis provides a comprehensive evaluation of Tesla's strategic capabilities and product excellence, while also highlighting areas that require further enhancements to fully capitalize on its potential.

3. Discussion

Tesla’s success is achieved by the work on the inner environment and the outer environment at the same time. Externally, Tesla has benefited from subsidies for electric vehicles in the cities where it sells them. Then, in the inner environment, the collaborative efforts of various departments of Tesla also have a positive cross-functional influence, which makes the positive impact of Tesla's Departmental strategy on corporate strategy double. Furthermore, Tesla's corporate strategy might be characterized as an endeavor to establish an Attacker's advantage, as opposed to a conventional disruptive innovation. According to the Attackers' Advantage strategy, it is recommended that the venture should engage in entering the product market with the intention of gaining an advantage over competitors. This advantage can be achieved by the establishment of technological leadership, targeting niche markets, and making investments in complementary assets that enhance a unique value proposition [8].

Conventional disruptive innovation refers to the emergence of tiny start-up companies that have successfully enhanced the performance of their products, hence adding significant value to the customers in many market segments. Once the tiny enterprises have amassed profitability, they can go towards higher-profit segments, thereby engaging in competition with the established firms in mainstream markets [8]. For Tesla, the Attacker's advantage is more suitable because it mainly considers its Technological Leadership, Market Positioning, and Expansion. The Attacker's Advantage strategy aligns with Tesla's focus on establishing technological leadership and continuously improving its products. In terms of market positioning, Tesla had an initial strategy of targeting specialized markets characterized by high-end luxury electric vehicles. This deliberate approach enabled Tesla to establish a presence in the industry and cultivate a robust brand reputation prior to venturing into more mainstream markets. Ultimately, the implementation of the Attacker's Advantage strategy played a pivotal role in facilitating Tesla's transition from a specialized luxury brand to a widely recognized and established player in the automotive industry.

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4. Conclusion

In conclusion, Tesla's success is due to a combination of factors that strategically positioned the company as an automotive pioneer. After examining each functional department's contributions, it becomes clear that each was crucial to Tesla's successful projects. Tesla's financial department's initial public offering (IPO) made the firm publicly listed, improving its brand visibility and competitiveness. Tesla's human resources department also excelled at recruiting and retaining top talent and creating a work atmosphere that valued innovation and environmental consciousness, in line with Elon Musk's goal. The Tesla marketing staff used innovative selling points and techniques to develop the company as a technologically advanced, environmentally concerned, and appealing brand. The operational department's focus on reducing production and building strategic alliances also helped Tesla grow and succeed in manufacturing. Tesla's commitment to R&D has helped it dominate the electronics industry and attract discerning consumers and innovators who appreciate luxury goods and experiences. Tesla's Attacker's Advantage business model has helped it create technological dominance, penetrate specialist areas, and expand into more accessible categories. Tesla's success can be credited to a well-planned and future-focused strategy in which multiple departments work together to make the company a leader in the sustainable electric vehicle market. The lessons learned from Tesla's success can help future startups achieve prominence.

However, the research relies significantly on literature reviews and secondary data sources, restricting its capacity to capture Tesla's dynamic strategy in real time. Additionally, focusing just on Tesla without examining its competitors weakens the research findings. Future studies may examine multiple startups in other industry and locales instead of just Tesla. This method would reveal sector-specific techniques' commonalities and differences.

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