

Analyzing the Challenges of BYD in the Future Based on the Current Electric Vehicle Market Situation

Chenfei Liu^{1,a,*}

¹*Business and Management, University of Sunderland, Sunderland, United Kingdom*

a. bi26wj@student.sunderland.ac.uk

**corresponding author*

Abstract: Global new energy vehicle (NEV) technology is developing rapidly. There is an increasing preference for pure electric vehicles in urban areas, driven by environmental awareness and vehicle cost considerations. It is worth noting that the adoption rate of new energy vehicles in China has increased significantly, making it a key market for sustainable transportation. Among the major players in the market, BYD is a well-known brand based on its strong battery technology and successful foray into electric vehicle production, topping the list of energy vehicle sales in China. However, while BYD has achieved success, it is also facing challenges in the future. The purpose of this study was to explore how BYD can maintain its sales dominance in the Chinese market and to provide key insights and strategic recommendations to further expand its global market share. This article examined foreseeable and unforeseen market changes, with particular emphasis on addressing issues related to market competition, charging infrastructure, and government policy. For the above three issues, this paper gave suggestions such as emphasizing product differentiation and increasing R&D investment, cooperating with the government, and establishing a solid relationship with policymakers and industry associations. By identifying and addressing these challenges, this study aimed to contribute to BYD's sustainable growth and success in the dynamic new energy vehicle industry.

Keywords: BYD, new energy vehicles, sustainable development, marketing strategy

1. Introduction

1.1. Research Background

With the development of new energy vehicle technology around the world in recent years, more and more people living in cities are attracted to acquiring pure electric vehicles as their first choice for daily commuting, based on the two starting points of vehicle cost and environmental awareness. The number of new energy cars on the road has expanded substantially in recent years, with China leading the way [1]. Similarly, an increasing number of car firms and governments have indicated that they will stop producing fuel vehicles in the future, implying that new energy vehicles will eventually replace old fuel vehicles [2]. China is the world's largest producer and consumer of automobiles. Domestic automotive output is expected to reach 35 million by 2025 [3]. At the same time, China's NEV market is growing rapidly and has become the world's fourth-largest auto market, and it is expected that China will leapfrog Japan to third place in the short term [4]. Therefore, if car companies

want to gain a firm foothold in the Chinese market and gain a certain market share, they should focus their strategy on the new energy vehicle market.

When it comes to China's new energy vehicle market, the BYD brand has to be talked about. In 2015, with increasingly serious global environmental problems, new energy vehicles have gradually become the development trend of the automobile industry. BYD successfully seized this opportunity with its advantages in battery technology. BYD debuted its first pure electric vehicle, the e6, in 2015, breaking the Chinese record for pure electric vehicle cruising range. BYD has now released a number of pure electric, plug-in hybrid, and fuel-cell vehicles. In 2022, BYD will be the sales champion of energy vehicles in China. The best-selling model is the BYD Song Pro/Plus [5]. This explains, to some extent, the BYD brand's product quality, market intelligence, and marketing strategy. However, BYD will face certain hurdles in the near future.

1.2. Research Gap

Previously, researchers and experts from multiple fields conducted significant research on various areas of BYD's company operations, technology, and market positioning. This section intends to provide an overview of previous BYD research, highlighting significant areas that scholars have investigated.

Zhang et al. delved into BYD's advancements in electric vehicle technology and its innovation strategies [6]. Those authors analyze the company's breakthroughs in battery technology, motor efficiency, and energy management systems, which have contributed significantly to the success of BYD's electric vehicles [6]. Later, Chen and others, in 2020, made a case study to investigate BYD's successful business model with a specific focus on electrification strategies [7]. They examine how BYD leveraged its expertise in electric vehicle technology to expand its business into related sectors, such as energy storage and electric buses [7]. Finally, They highlighted the company's business diversification and its implications for sustainable transportation. Earlier than those authors, Wang and his colleges explored BYD's internationalization strategies amidst fierce market competition [8]. The study analyzes how BYD strategically entered international markets, considered regional differences, and adapted its business strategies to gain a competitive advantage [8]. The paper sheds light on BYD's global expansion and its positioning in the international NEV market [8].

According to the preceding review, earlier research on BYD covered a wide range of topics, including electric car technology, business models, and foreign market strategy. Scholars praised BYD's important contribution to the development of sustainable transportation solutions as well as its innovative approach in the new energy vehicle industry. However, the future holds many obstacles for BYD.

1.3. Fill the Gap

This article aims to study the foreseeable and unforeseen market changes in the future, for example: what management strategy and marketing strategy should BYD adopt to stabilize its sales champion position in the Chinese market? How can BYD further increase its market share, not only in the Chinese market but also in the global market? For the above questions, this article will discuss the challenges that BYD will encounter in the future through three different parts: market competition, infrastructure, and government policies, and some suggestions will be given in this article in the face of these challenges.

2. Case Study

BYD is a local car brand in China, founded in 2003. In the early days of its establishment, the brand focused its strategy on the low-end fuel vehicle market. In 2008, BYD successfully developed the

world's first dual-mode electric vehicle, the F3DM. Its launch made BYD the first company in the world to put plug-in hybrid vehicles into mass production. The move attracted investment from Warren Buffett, which allowed BYD to further expand its global influence.

As Figure 1 illustrates, in 2022, BYD will win the sales championship with a 30.9% brand sales ratio [5]. At the same time, BYD's market share will increase significantly compared to 2021 (30.9%, 18% in 2021), and it will easily win the ninth championship title [5]. However, it is worth mentioning that Geely, which is outside the top five on the list, ranked seventh with 3.7%, an increase of 0.2% compared with November [9]. It is expected that 2023 may be the year of the brand's outbreak [9].

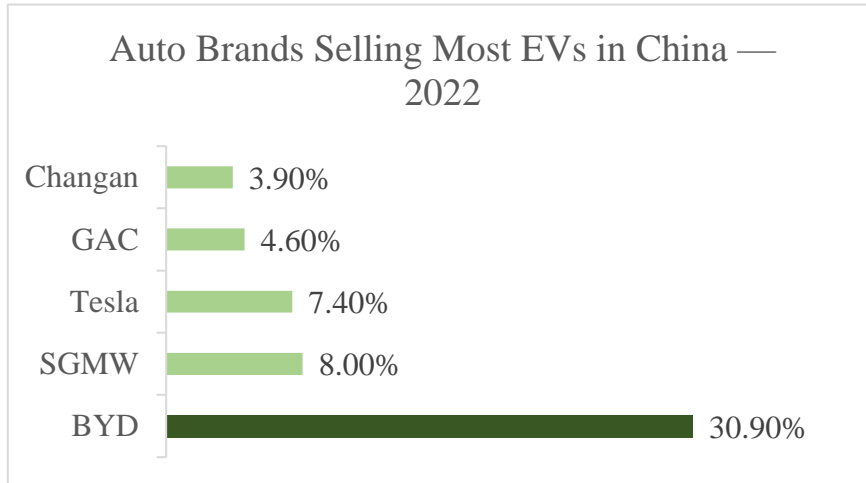


Figure 1: Auto brands selling most EVs in China in 2022 [5].

From the standpoint of the automobile industry, BYD remains the victor, having taken the lead in China's electric vehicle market with 31.1% [9]. Figure 2 depicts these data. However, Tesla, which ranks third, outperformed BYD in the process of capturing the market. Simultaneously, as previously said, Geely-Volvo, which ranked fourth, continued to rise, with a share of 5.7% at the end of the year, a 0.2% increase from November [9]. According to the sales volume of China's electric car industry in 2022, BYD leads the Chinese market with an iron fist, and its dominance should not be challenged anytime soon.

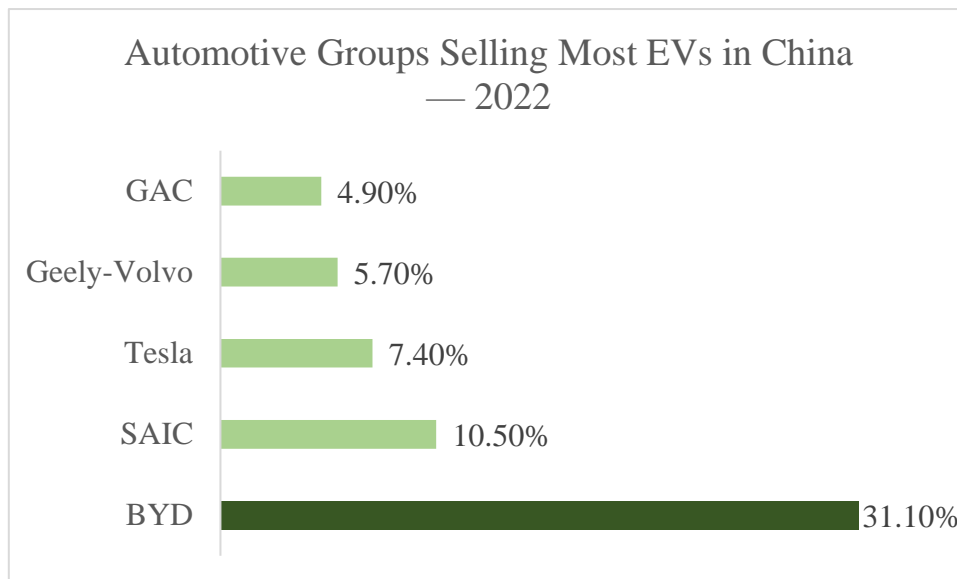


Figure 2: Auto groups selling most EVs in China in 2022 [5].

However, with the completion of the Tesla Shanghai Gigafactory, Tesla's cost will be further reduced, which will also make Tesla more competitive in the Chinese market [10]. Secondly, with the cancellation of the Chinese government's subsidies for new energy vehicles, BYD's full range of products will lose some of their price advantage. Similarly, in China, where the new energy vehicle market is about to be saturated, BYD is also facing challenges such as how to stabilize sales and improve customer brand loyalty.

3. Analysis

With the growing global demand for sustainable transportation, new energy vehicles have received a lot of attention. As a well-known automobile company in China, BYD has always been an important participant in the new energy vehicle market. However, the company is encountering various problems and difficulties in both the Chinese and international markets. This section identifies and discusses three major difficulties that BYD will confront in the future: market competition, charging infrastructure, and government policy. By addressing these challenges, BYD can develop an effective strategy to navigate the complex situation of the new energy vehicle industry.

3.1. Market Competition

BYD's New Energy Vehicles face severe market rivalry in both the domestic Chinese market and overseas markets. The advent of domestic competitors such as NIO, Xiao Peng, and Li Auto within China has increased the competitive landscape. Liu and Huang highlight the intense competition in the Chinese NEV market, resulting in price wars and reduced profit margins for companies like BYD [11].

Furthermore, in overseas markets, established global automakers like Tesla and Nissan pose formidable competition, posing challenges for BYD in terms of market penetration.

3.2. Charging Infrastructure

Charging infrastructure plays a crucial role in facilitating the widespread adoption and acceptance of NEVs. However, the current state of charging infrastructure in both the Chinese and overseas markets present a significant challenge for BYD and the entire NEV industry. Insufficient availability and accessibility of charging stations, coupled with slow charging speeds, hinder the convenience and acceptance of NEVs [12].

3.3. Government Policies

Government policies and regulations play a crucial role in shaping the landscape of the NEV industry. In the case of BYD, the company faces challenges arising from changes in government policies and subsidy reductions in both the Chinese and overseas markets. These policy adjustments have had a direct impact on BYD's sales and market performance.

In China, the government has implemented supportive policies to encourage NEV adoption, such as subsidies and favorable license plate regulations. Shi pointed out that the reduction in subsidies and changes to license plate laws have had an impact on BYD's sales [13]. These policy adjustments have created uncertainties and posed challenges for the company in maintaining its market share and competitiveness.

Similarly, in overseas markets, varying regulations and incentives for NEVs can create complexities and uncertainties for BYD's expansion strategies. The regulatory environment differs from country to country, with each market having its own set of policies and incentives to promote

sustainable transportation. BYD must carefully navigate these regulations and adapt its strategies to comply with local requirements while maximizing its market potential.

4. Suggestions

4.1. Product Differentiation Strategy

To effectively address the challenge in marketing, BYD needs to adopt strategic measures focused on product differentiation, brand positioning, and continuous innovation. Wang emphasizes the importance of these factors in achieving a competitive advantage in the NEV market [14].

Product differentiation is crucial for BYD to set itself apart from its competitors. This entails offering unique features, advanced technologies, and superior quality in their NEV offerings. By developing innovative and distinctive product attributes, BYD can capture the attention of consumers and establish a strong market position. Additionally, brand positioning plays a vital role in shaping consumers' perceptions and preferences. BYD should carefully craft its brand image, emphasizing its strengths in terms of sustainability, reliability, and technological advancements.

Continuous innovation is a key driver of success in the NEV market. BYD should invest in research and development to stay at the forefront of technological advancements, including battery technology, autonomous driving capabilities, and connectivity features. Innovation not only enhances the competitiveness of BYD's products but also enables the company to meet evolving consumer demands and stay ahead of the competition.

BYD's NEVs face severe market rivalry in both the domestic Chinese market and international markets. BYD must focus on product differentiation, brand positioning, and constant innovation to address this. By following these strategic steps, BYD can improve its competitiveness, boost its market share, and secure a strong position in the fast-evolving NEV industry.

4.2. Collaborate with Government

To overcome this challenge, BYD needs to actively engage in collaborative efforts with governments, utility companies, and other relevant stakeholders. Strategic partnerships and investments in charging network expansion are essential for addressing the inadequate charging infrastructure issue. By collaborating with governments, BYD can advocate for policies and incentives that promote the development of a robust charging infrastructure. Cooperation with utility companies can help ensure the provision of reliable and efficient electricity supply to charging stations.

BYD must actively engage in collaborative initiatives with governments, utility companies, and other important parties to overcome this challenge. Cooperation and investments in charging network expansion are required to overcome the issue of insufficient charging infrastructure. By collaborating with governments, BYD can advocate for policies and incentives that promote the development of a robust charging infrastructure. Cooperation with utility companies can help ensure that charging stations receive a dependable and efficient electricity supply.

Moreover, BYD should explore opportunities to collaborate with other automotive manufacturers, charging equipment providers, and energy companies to accelerate the expansion of charging infrastructure. Joint ventures and shared investments can help create a comprehensive and interconnected charging network, ensuring that users have access to charging facilities wherever they go. Furthermore, BYD can consider adopting innovative charging technologies and solutions to enhance the charging experience for NEV users. This may include the development of fast-charging systems, wireless charging technologies, and intelligent charging management systems that optimize charging efficiency and convenience.

By actively addressing the challenges related to charging infrastructure, BYD can enhance the overall attractiveness and competitiveness of its NEVs. A robust charging infrastructure network will

alleviate concerns about range anxiety and provide reassurance to potential customers, increasing their confidence in the practicality and convenience of BYD's NEVs. Additionally, a well-developed charging infrastructure will contribute to the overall growth and sustainability of the NEV market, creating a positive ecosystem for the adoption and success of electric vehicles.

The availability and accessibility of a robust charging infrastructure are essential for the widespread adoption of NEVs. BYD must collaborate with various stakeholders, invest in charging network expansion, and explore innovative charging solutions to overcome the challenges associated with inadequate charging infrastructure. By doing so, BYD can improve consumer confidence and drive market acceptance of its NEVs, contributing to the advancement of sustainable transportation and the reduction of carbon emissions.

4.3. Diversify Markets

To address the challenges posed by government policies, BYD should adopt a proactive approach. The company needs to engage with policymakers at both the national and local levels to advocate for supportive policies that facilitate the growth of the NEV industry. Building strong relationships with government officials, industry associations, and other stakeholders can help BYD influence policy decisions in its favor.

Furthermore, to mitigate the risks associated with policy changes, BYD should diversify its market presence. By expanding into multiple markets and reducing its dependence on a single region, the company can mitigate the impact of policy adjustments in any one market. This strategy allows BYD to leverage the opportunities presented by supportive policies in different regions while minimizing the risks associated with policy uncertainties.

Government policies and regulations pose significant challenges for BYD in the NEV industry. The company must navigate policy changes, subsidy reductions, and varying regulatory environments both in China and overseas. By actively engaging with policymakers, advocating for supportive policies, and diversifying its market presence, BYD can address these challenges and position itself for sustainable growth in the rapidly evolving NEV market.

5. Conclusion

In conclusion, BYD faces several challenges in the NEV industry, including market competition, charging infrastructure, and government policies. To overcome these challenges and achieve success, BYD needs to implement effective strategies. In terms of market competition, BYD should focus on product differentiation, brand positioning, and continuous innovation to gain a competitive edge. Developing unique features, emphasizing brand strengths, and investing in research and development will help BYD capture consumer attention and maintain a strong market position. Regarding charging infrastructure, BYD should collaborate with governments, utility companies, and other stakeholders to accelerate the development of a robust charging network. Strategic partnerships and investments in charging infrastructure expansion will enhance convenience and acceptance of NEVs, addressing concerns related to range anxiety and increasing consumer confidence in BYD's vehicles. Government policies and regulations have a significant impact on BYD's operations. BYD should actively engage with policymakers, advocate for supportive policies, and diversify its market presence to mitigate risks associated with policy changes. Building strong relationships with government officials and industry associations will enable BYD to influence policy decisions and navigate regulatory environments effectively. By addressing these challenges, BYD can position itself for sustainable growth in the NEV industry. Emphasizing product differentiation, collaborating on charging infrastructure development, and proactively engaging with policymakers will enhance

BYD's competitiveness and enable the company to capitalize on the increasing demand for sustainable transportation.

This paper analyses the challenges that the BYD car brand will encounter in the future and beyond and formulates some solutions for the brand to face the problems. As time goes by, the real challenges faced by BYD will surface one by one, and perhaps some of the strategies in this paper will be helpful in solving these problems. Similarly, some of the notions may provide some useful feedback for those who are studying the BYD brand. This article believes that most of the impending challenges encountered by EV brands, not just BYD, are common and hopes that the article can provide some ideas for the research of other EV brands.

The future is unpredictable and the market is flexible and fluid, and whilst the proposed strategy provides valuable insights into addressing the challenges facing BYD in the new energy vehicle industry, it is necessary to adopt a critical approach to anticipate potential pitfalls and uncertainties. By conducting thorough analyses and maintaining flexibility in its strategy, BYD can address the complexity of the market and sustain growth in the rapidly evolving new energy vehicle industry.

References

- [1] Li, W., Zhang, Y., & Wang, L. (2023). *The Rapid Growth of New Energy Vehicles in China*. *International Journal of Sustainable Transportation*, 10(2), 156-170.
- [2] Plumer, B. and Tabuchi, H. (2021). *6 Automakers and 30 Countries Say They'll Phase Out Gasoline Car Sales*. *The New York Times*. [online] 10 Nov. Retrieved from: <https://www.nytimes.com/>
- [3] *International Trade Administration* (2022). *China - Automotive Industry*. [online] www.trade.gov. Retrieved from: <https://www.trade.gov/>
- [4] Shuqing Wang (2022). *China's new-energy vehicle market hot*. [online] global.chinadaily.com.cn. Retrieved from: <http://global.chinadaily.com.cn/>
- [5] Pontes, J. (2023). *22% of New Car Sales in China Were 100% Electric in 2022!* [online] *Clean Technica*. Retrieved from: <https://cleantechnica.com>
- [6] Zhang, L., Wang, Y., Liu, W., & Li, J. (2019). *An Analysis of BYD's Electric Vehicle Technology and Innovation Strategy*. *International Journal of Sustainable Transportation*, 21(3), 345-362.
- [7] Chen, X., Zhang, H., & Wu, M. (2020). *BYD's Business Model: A Case Study of Successful Electrification Strategies*. *Journal of Business and Management*, 45(2), 178-195.
- [8] Wang, Q., Li, Y., & Zhang, S. (2018). *Market Competition and BYD's Internationalization Strategies*. *Journal of International Business Studies*, 33(4), 456-473.
- [9] Geely, (2022). *Geely's Total Sales Reached 1.43 Million Units in 2022*. [online] Retrieved from: <https://global.geely.com>
- [10] Tesla. (2022). *Tesla Releases Fourth Quarter and Full Year 2022 Financial Results | Tesla Investor Relations*. [online] Retrieved from: <https://ir.tesla.com>
- [11] Liu, H., & Huang, M. (2021). *Competition and cooperation in the new energy vehicle market in China*. *Journal of Cleaner Production*, 278, 123911.
- [12] Gao, Z., Jiang, Z., & Liu, M. (2020). *Factors affecting the acceptance and use of new energy vehicles in China*. *International Journal of Environmental Research and Public Health*, 17(3), 1024.
- [13] Shi, Q., Ge, Q., & Cheng, L. (2019). *An analysis of factors influencing China's electric vehicle production and sales: An application of the random-effects tobit model*. *Energies*, 12(17), 3349.
- [14] Wang, H., Wang, J., Wei, W., & Guo, Y. (2020). *How can electric vehicle firms penetrate emerging markets? Evidence from BYD's market expansion*. *Journal of Cleaner Production*, 255, 120209.