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BYD's Strategic Planning Study for the Future New Energy Vehicle Market

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Abstract: With the rapid development of science and technology and the increasing awareness of global environmental protection, new energy vehicles have become an important direction for the transformation of the global automobile industry. As one of the leaders in the global new energy vehicle market, BYD is actively responding to the challenges and opportunities of this market transformation with its profound accumulation in battery technology, electric vehicles and hybrid vehicles. However, the new energy vehicle market still faces many uncertainties and challenges, such as technological innovation, market competition, policies and regulations, and infrastructure development. In order to meet these challenges, BYD must develop and implement an effective strategic plan to ensure that it maintains its leading position in the highly competitive market and to promote the sustainable development and progress of the new energy vehicle industry. Through an in-depth study of BYD's strategic planning, this paper expects to provide useful references and insights for BYD and other new energy vehicle companies. Next, this paper will comprehensively analyze BYD's strategic planning and implementation paths in terms of its technological innovation, key financial indicators and cooperation and competition. Through the in-depth analysis of this study, it can better understand how BYD has carved out a path of sustainable development in the new energy vehicle market.

Keywords: New Energy Vehicles, BYD, Strategic Planning, Sustainable Development

1. Introduction

Over the past few years, the new energy vehicle sector has surged with promise, painting a wide vista for future market prospects. The State Council's issuance of the New Energy Vehicle Industry Development Plan (2021-2035) in October 2020 underscores the imperative for China's transition from being merely a major automotive player to becoming a powerhouse in the automotive realm [1]. This transition is not just a strategic response to climate change but also a pivotal move towards fostering green development. China's new energy automobile industry with the world began to develop at a high speed, injecting new energy for the development of the world economy. This paper will mainly analyze BYD the company through multiple perspectives, through the embodiment of data and arguments to predict the future development of the new energy vehicle market.

New energy vehicles entail harnessing unconventional automotive fuels to power cars, incorporating sophisticated vehicle power control and propulsion technologies, and embodying advanced technical principles along with novel car technologies and structures. This strategic

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emergent industry encompasses all vehicle propulsion systems excluding gasoline and diesel engines, aimed at mitigating air pollution, addressing energy shortages, and guiding the future trajectory of the automotive sector. Established in February 1995, BYD stands as a pioneering high-tech enterprise dedicated to fulfilling people's aspirations for an enhanced quality of life through technological innovation. With a global presence spanning over 30 industrial parks across six continents, BYD has strategically positioned itself for widespread impact [2]. BYD's business footprint spans across electronics, automotive, new energy, and rail transportation sectors. Renowned as one of the foremost players in the global new energy automobile industry, BYD has established a comprehensive portfolio in the realm of new energy vehicles. From traditional fuel to hybrid and pure electric vehicles, BYD has meticulously developed a full suite of power products. Furthermore, the company has attained mastery over the core technologies within the new energy automobile industry chain, encompassing batteries, motors, electronic controls, and IGBTs, facilitating seamless electrification transformation. As China's largest electric vehicle manufacturer, BYD, with its continuous improvement and progress in the field of new energy, now has professional technology and rich experience, and gradually gained the recognition of the majority of consumers as well as significant market share growth. Based on the statistics, BYD achieved an operating income of 602.3 billion yuan in 2023, marking a robust year-on-year growth of 42.04%. Its net profit surged to 30.041 billion yuan, witnessing an impressive 80.72% increase compared to the previous year. After deducting expenses, the net profit stood at 28.462 billion yuan, exhibiting a remarkable 82.01% year-on-year rise [3]. The historical high of operating income cannot be separated from BYD's well-organized strategic planning, BYD continues to make efforts in high-end, completing the layout of high-end product matrix such as Yangwang, Equation Leopard and Tengshi, which signifies that BYD is perfecting the product matrix, multi-brand and multi-line go hand in hand [4]. As the current domestic new energy vehicle "boss" BYD has just delivered a perfect annual report for 2023, and recently listed the first A0-class pure electric SUV equipped with e-platform 3.0 - Yuan UP [5]. The arrival of Yuan UP rewrites BYD's position in the A0-class market, which has always lacked an SUV. According to BYD's planning, the UP will focus on the A0-class market and explore the A00-class market, forming a "twin-star" partnership with the Yuan PLUS, so that the Yuan IP can cover different circles of the pan-A-class market [6]. This paper will analyze BYD's financial indicators, valuation situation, risk management by analyzing the company's key indicators to explore the real situation of the enterprise.

2. Performance Evaluation

2.1. Liquidity

Table 1: Liquidity ratio of BYD and its competitors.

Company Name	Current ratio	Quick ratio	Cash ratio
BYD	0.67	0.47	0.26
SERES	0.72	0.62	0.43
CHANGAN AUTO	1.26	1.17	0.72
GAC GROUP	1.31	1.09	0.67

In order to analyze BYD's liquidity and its asset liquidity from multiple perspectives, the above chart reflects the ratio indicators of BYD and its three competitors. The data obtained from the latest annual report of 2023 can be compared objectively, as shown in Table 1. From the comparison of the four companies, it can be judged that BYD's quick ratio is as low as 0.67, while the quick ratio index of GAC Group in the same industry is as high as 1.31, which intuitively shows that BYD's asset liquidity and short-term solvency are weaker than that of its three competitors, and according to BYD's annual

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reports of the past few years, it can be seen that its current ratio is always lower than the industry standard. And according to BYD's annual reports in recent years, it can be seen that its current ratio is always lower than the industry standard. The main reason for this is that BYD's R&D activities in new energy vehicles are very frequent, and the increase in R&D investment makes its index lower, but this is also an indispensable factor for BYD to become a leader in this industry.

BYD's quick ratio is also the lowest among the four companies, due to BYD's long-term fixed assets that cannot be realized, as well as the lack of profitability; the increase in BYD's inventory as well as the increase in its liabilities are the reasons for its low quick ratio. As per the statement disclosed on BYD's official website, the company witnessed increments in its inventory of automobiles and parts, short-term liabilities, accounts payable, and short-term borrowings during both 2022 and 2023. Over the past five years, BYD has maintained a consistent debt ratio of approximately 65% in its capital structure. This indicates a high level of debt operation and an excessive financial leverage factor for BYD. Consequently, in the event of operational challenges, BYD could face heightened financial risks.

BYD's liquidity of the third largest indicator is also the lowest of the four companies, cash ratio only reached 0.26, financial risk coefficient is the highest compared to the other three companies. The lack of cash flow and large liquidity liabilities are a major drawback for BYD's future development. BYD has fewer high-turnover segments, a longer conversion cycle from investment to revenue generation in the automobile manufacturing and new energy industries, and the higher debt levels mentioned above are all reasons for BYD's poor liquidity.

2.2. Solvency

Table 2: Solvency ratios of BYD.

Company Name	Total Debt Ratio	Long-Term Debt Ratio	Times interest earned
BYD	77.86%	11.1%	6.92

Primarily, solvency denotes the capacity of a business to settle both its long-term and short-term debts using its assets (refer to Table 2). The capability of a business to generate cash and fulfill its debt obligations is pivotal for its sustained and flourishing existence. Under the study of analyzing a company's future development and strategic planning, solvency is very important, which affects the company's financial management, production and operation activities, financial status, creditworthiness and financing, suppliers and employees, investment and fund-raising activities and so on. Per the article featured on BYD's official website, it was revealed that on January 16, 2024, BYD Dream Day was ceremoniously inaugurated, showcasing BYD's prowess in intelligence and its forward-looking strategic blueprint. Central to the event was the unveiling of a novel strategy for the intelligent advancement of new energy vehicles—vehicle intelligence—alongside a plethora of technological breakthroughs poised to steer the industry towards a new era of intelligent development. Concurrently, BYD disclosed plans for constructing the world's inaugural set of all-terrain professional racetracks, aimed at nurturing a distinctive Chinese automotive culture in the age of new energy. Before this strategy was officially announced, the new energy vehicle subsidy policy, which began in 2015, was finally and completely withdrawn from the new energy industry in 2023, which means that new energy vehicle companies will receive less funding. In the new strategic planning and policy adjustments under the impact of BYD's solvency is facing a serious challenge: BYD over-reliance on debt financing, short-term borrowing accounted for a high proportion of the financial reports in recent years that BYD in the debt financing borrowing accounted for a high proportion, according to the official financial reports of the BYD in recent years can be learned in the past five years the high gearing ratio, respectively, for the 66.33%, 68.81%, 68.00%, 67.94%, 66.76%, always

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staying above 60%. Excessive inventory backlog is also a problem BYD cannot be ignored, 2021-2023 BYD's inventory were 43.4 billion, 79.1 billion, 87.7 billion, accounting for the ratio of current assets of 26.1%, 32.8%, 29% showing a slowly rising trend. For manufacturing companies inventory backlog is too big. For the strategic planning of a large number of scientific research experiments in the field of "intelligent" investment is a big problem. Accounts receivable accounted for a large proportion of the

In the past three years, BYD's accounts receivable have been on the rise to 36.3 billion, 38.8 billion and 61.9 billion, which makes accounts receivable account for most of the enterprise's funds, affecting the normal production, and the same short-term solvency will also be affected. In the promulgation of the policy as well as the adjustment of the market direction, the government subsidy began to decrease, from the government issued the Notice on Further Improving the Financial Subsidy Policy for the Popularization and Application of New Energy Vehicles in March 2019, which indicates that it reduces the subsidy standard of new energy passenger cars, trucks and buses. This shows on the other hand that the promulgation of this policy will have an impact on BYD's capital, thus affecting the solvency.

2.3. Profitability

In judging the profitability of a company it is already necessary to analyze not only the data selected from the income statement, but also the combination of the three main financial statements: the balance sheet, the income statement and the cash flow statement. From its core elements: earnings quantitative, earnings profitability and earnings growth in a comprehensive consideration.

Table 3: Profitability ratio of BYD from 2021 to 2023.

	2023	2022	2021
Net profit margin	24.40%	16.14%	3.73%
Gross profit margin	20.21%	17.04%	13.02%
Operating profit margin	5.20%	4.18%	1.84%
Rate of return on total assets	5.12%	4.21%	1.23%

Table 3 shows the important indicators of BYD's profitability in the last three years. In just one year from 2021 to 2022 BYD's gross profit margin increased from 13.02% to 17.04%, and the gross profit margin reached 20.21% in the following year. The reason for this I believe is firstly the profitability benefits of upgraded technology and the change in scale of BYD's automobile business. BYD has gradually upgraded its selling price and market positioning in the past few years, and in the first half of 2023, the sales of BYD's Han series improved by roughly 51.9% YoY, and the sales of Teng's d9 also improved by 34.88%. Expansion and upgrading of high-end models are increasingly boosting BYD's buy rate. The decline in the price of lithium carbonate is also a major element of BYD gross profit margin improvement, because BYD whole car, especially new energy vehicles, about 70% of the cost is from the battery, and the price of lithium carbonate directly determines the price of raw materials for the battery, in the first half of the year, the average price of lithium carbonate as a whole is 254,600 yuan / ton, compared to last year, a decline of 36.8%.

The most obvious increase in return on net assets, just 2021 to 2022 a year, return on net assets rose from 3.73% to 16.14%, a full 12.41% increase in 2023 is also continued to grow to 24.40% return on net assets. The development of electric vehicles has become a trend as the world places more and more emphasis on reducing carbon emissions and combating climate change. Against this backdrop, BYD, with its strong technological research and development capabilities and smart marketing strategies, has successfully transformed this market boom into sales revenue from its products.

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Secondly, BYD has a clear cost control strategy in the whole industrial chain. From raw material procurement, to manufacturing, to sales and service, BYD is able to effectively control costs to ensure that the company's profit level remains high despite the increased competition in the industry.

BYD can achieve profitability indicators go hand in hand, in recent years have achieved growth is attributed to the following reasons. In previous epidemics, raw material price spikes, supply chain instability and other severe challenges. BYD's strategic plan is: to form a complete set of new energy vehicle research and development supporting production system, and in the core areas of batteries, motors, electronic control, etc., the goal is to continue to realize the global technology and industry leadership and maintain it.

In summary, this article for BYD's profitability in recent years momentum is better, which for BYD in the future development also laid a good foundation.

3. Valuation

3.1. Various Types of Vehicles Meet Different Consumers' Needs

Currently, BYD boasts a diverse portfolio comprising seven categories of road vehicles and four categories of specialized vehicles, effectively catering to a wide spectrum of operational requirements and delivering significant societal benefits. In recent years, the BYD Dynasty series, particularly the Hantang model, has garnered notable sales figures and garnered acclaim. The unveiling of this year's new marine series, the Seal Family supercar, has generated considerable anticipation, evidenced by the pre-sale reservation of 10,000 units and continuous online reviews. Positioned as a frontrunner in the new energy vehicle sector, BYD commands high regard from the Chinese populace. Furthermore, BYD's foray into international markets has been underscored by the signing of car export agreements with several nations, underscoring its strides in global market penetration.

3.2. BYD's Development Safeguarded by Full Industry Chain Advantage and Unique Core Technology

BYD enjoys a significant edge through its comprehensive industrial chain for new energy vehicles, marked by 100% autonomous research, development, design, and manufacturing of batteries. Their groundbreaking achievement in 2020 with the blade battery not only revolutionized lithium iron phosphate battery architecture but also effectively tackled the range limitations of new energy vehicles. With a staggering 26,671 patented technologies, BYD holds the top position in China and possesses proprietary core technologies across various domains. As the sole automotive enterprise in China mastering the "three-electricity" technologies—battery, motor, and electronic control—BYD stands out [7]. The reliability and scalability of the blade battery technology have empowered BYD to command the entire industrial chain of new energy vehicles, establishing an industrial production system characterized by vertical integration and an extensive product line. Their 100% self-reliant R&D prowess underscores their global competitive edge, leaving rivals worldwide without room for underestimation.

3.3. BYD Product Strategy

Presently, BYD's new energy brand strategy revolves around the "7 + 4 strategic framework". The "7" symbolizes seven categories of road vehicles, encompassing private cars, city buses, intercity buses, freight logistics, construction logistics, and sanitation vehicles. Meanwhile, the "4" represents four categories of specialized vehicles tailored for warehousing, mining, airports, and ports. This comprehensive market strategy is poised to significantly enhance BYD's foothold in the new energy market, posing a substantial threat to the product lines of individual manufacturers. Furthermore,

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BYD's customer-centric approach prioritizes fulfilling customized requirements, ensuring that it can adeptly address diverse customer needs [8].

3.4. BYD Pricing Strategy

To gain a larger market foothold, BYD initially positioned its new energy vehicles with a traditional low-price strategy. However, solely relying on low pricing may lead to a downward spiral in value. Therefore, BYD recognizes the imperative of intensifying its independent innovation endeavors and continually advancing its new energy product portfolio. Consequently, BYD has shifted towards adopting a product differentiation pricing strategy. By offering unique and personalized differentiated services, BYD not only identifies more dependable business opportunities but also enlarges its market share. For instance, in Denmark, where the Nordic climate demands specific vehicle features, BYD customized their K9 model with insulation, independent auxiliary heating systems, and auxiliary functionalities, resulting in units priced at over 4 million yuan each [9].

3.5. BYD Channel Strategy

BYD Auto primarily operates through a dealer model in its sales channels, a setup that demands proactive engagement with numerous competitors both domestically and internationally in the new energy vehicle sector. Competitors such as Tesla, Toyota, as well as emerging domestic forces like Azure, Xiaopeng, and Ideal, pose significant challenges. Presently, BYD has cultivated partnerships with European and American customers, bolstering its credibility through the Dutch quality certification system, thereby facilitating access to the European market. Moreover, BYD has established long-term cooperation intentions with official group customers in California, USA, which serves as an effective means of promoting its new energy vehicles to the public.

3.6. BYD Promotion Strategy

The primary promotional approach adopted by BYD for its new energy vehicles revolves around advertising promotion. Leveraging press releases, celebrity endorsements, sponsorship of reality TV shows, and other promotional avenues, BYD aims to bolster the brand's influence. Additionally, exhibition marketing stands as another cornerstone of BYD's promotional strategy [10]. Each year, BYD actively participates in numerous domestic and international exhibitions, offering consumers the opportunity to directly experience their new energy vehicles, thereby fostering a deeper understanding of the benefits of new energy technology.

4. Conclusion

BYD is still in the process of transitioning from electrification to intelligence, BYD relies on the scale advantage of its technology platforms (DM-i system, e-platform technology), and the integration advantage of the whole industry chain to achieve strong profitability. And with BYD's successive launch of high-end models, such as Yangwang U8, Yangwang U9 and Equation Leopard, and the output of high-end models, the hot sales of high-margin models, BYD's net profit per vehicle will continue to grow, and the growth of net profit and sales volume will increase together will make BYD's profit out of the beautiful curve. Secondly, BYD's many achievements in the field of intelligentization. The E-Square intelligent motor drive technology and the Cloud Van intelligent body control system redefine the standard of intelligentization. In terms of important data indicators, BYD in 2023 Q1-3 national new energy vehicle sales of 6,278,000 units, an increase of 37.5% year-on-year; the company's sales of 2,080,000 units, an increase of 75.5% year-on-year, the growth rate is higher than the industry as a whole, in the context of BYD's strategy of pure electric and hybrid

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models sales will continue to maintain rapid growth, and the full year's sales are expected to continue to increase. 2023 Q3 company Gross profit margin of 22.12%, up 3.16pct year-on-year, up 3.4pct sequentially. It measured 2023Q1/Q2/Q3 single-vehicle net profit of 0.69/0.87/11.4 million yuan, respectively. In the background of subsidy withdrawal and price war, the company through the supplier annual drop and scale effect to ensure profitability resilience. Upstream battery raw material price cuts, car net profit is expected to continue to improve. But BYD still has some problems at this stage, DM technology advantage is replaced by multi-gear DHT technology, with the predominant plug-in technology makes Qin PLUS, Song, Han, Tang and other models combined sales of more than 100,000, but these BYD rely on the core technology are being overcome by other car companies, especially the Ningde era of the Shenxing super-charged batteries, the charging speed and cost are better than BYD. BYD's operational aspects compared to the industry is also not very good, BYD's sales costs, personnel costs, research and development costs and financial expenses together, the proportion is higher than the industry average, indicating that BYD's management efficiency and cost control is worse. From BYD's valuation, P/E ratio, P/N ratio or P/S ratio, currently higher than the industry average, that is to say, relative to BYD's fast-growing revenues and profits, BYD's valuation may still be on the high side. So to sum up, BYD in technology, operation and valuation of the company has certain problems and at the same time there is a reciprocal risk, but considering the company's new energy vehicle business field boom degree is high, the growth space is large, in the context of anti-globalization, the company's vertical industry chain advantage is obvious, BYD is still a good enterprise can be invested in.

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