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Blueprint of China's new Energy Vehicle Enterprise Development

-- Take XPENG Motors as an example

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ABSTRACT

This study, set against the backdrop of China's "dual carbon" goals proposed by the Chinese government, delves into the current development status of China's new energy vehicle industry, as well as the operating conditions, core strategic direction, and future plans of XPENG Motors. By examining the rapid growth of the domestic new energy vehicle market and the enhancement of international competitiveness, this paper reveals XPENG Motors 'specific practices in technological innovation, market expansion, and global layout. It also combines SWOT analysis to thoroughly explore its strengths, weaknesses, opportunities, and threats. The central argument of this paper is to propose strategic recommendations for building competitive advantages in intelligence, electrification, and globalization through the analysis of XPENG Motors' financial and operational data from 2021 to 2024, aiming to achieve sustainable growth and address market competition and policy challenges.

KEYWORDS

China's new energy vehicles; XPENG Motors; Business conditions; Strategic direction; SWOT analysis

1. INTRODUCTION

In 2020, the Chinese government officially proposed the "dual carbon" goals, aiming to peak carbon emissions before 2030 and achieve carbon neutrality before 2060. The introduction of these goals marks that green and low-carbon development has become one of the core strategies for China's national development. Under this strategic backdrop, new energy vehicles, as a key pathway to achieving the "dual carbon" goals, have received significant attention from the Chinese government and strong policy support and promotion. In recent years, China's new energy vehicle market has achieved remarkable success domestically, with production and sales increasing significantly year-on-year in 2023, reaching a market share of 31.6%. At the same time, it has demonstrated strong competitiveness in the international market. For example, total exports surged from $10.87 billion in 2021 to $41.92 billion in 2023, and cumulative exports from January to August 2024 reached $31.62 billion, up 22.5% year-on-year, with pure electric passenger vehicles accounting for the largest share. The new energy vehicle industry has become an important part of China's strategic emerging industries and holds a leading position globally.

Currently, the new energy vehicle industry has formed a diversified competitive landscape. BYD Auto adheres to the philosophy of "technology reigns supreme, innovation is the soul," leveraging its outstanding R&D capabilities and unique innovative model to achieve comprehensive and rapid

development. Li Auto focuses on customizing safe, comfortable, and convenient travel solutions for family users, distinguishing itself in fierce market competition through deep insights into the automotive industry and forward-looking strategic planning. Tesla, as a globally renowned new energy vehicle brand, has successfully maintained its leading position among foreign brands by localizing production in China and capitalizing on its brand effect.

XPENG Motors, as a new energy vehicle brand characterized by intelligent driving technology and high-performance electric models, continues to invest substantial resources in the development of new models. The company has built its competitive edge through advanced technologies such as the XNGP system (City Leading Assistance), XPILOT autonomous driving assistance system, and Xmart OS intelligent operating system. However, intense market competition, particularly price wars initiated by peers, has led to a general decline in profitability across the automotive industry. Moreover, the significant investment XPENG Motors makes in research and development also puts pressure on its financial condition. Therefore, XPENG Motors urgently needs to explore a path of sustainable growth to ensure it maintains its leading position in future market competition.

This article aims to collect and analyze financial report data of XPENG Motors and related competitive product data from 2021 to 2024, delving into the current development status of XPENG Motors. Based on this analysis, it proposes future directions and strategic recommendations. Through these analyses and suggestions, the article hopes to provide feasible guidance and assistance for the future development of XPENG Motors.

2. FINANCIAL DATA AND STRATEGIC PLANNING

2.1. Analysis of the current operating conditions of XPENG Motors: [1]

Overview of 2024 annual performance of XPENG Motors: the total revenue reached 40.87 billion yuan, with a year-on-year growth rate of 33.2%.

Gross margin was 14.3%, up 12.8 percentage points from the previous year, marking the sixth consecutive quarter of positive growth. Net loss was 5.79 billion yuan, a reduction of 44.2% compared to 2023 (10.38 billion yuan). Cash and cash equivalents reserves stood at 41.96 billion yuan, indicating good liquidity.

Highlights of the fourth quarter of 2024

Quarterly deliveries were 91,500 units, up 52.1% year on year and a record high for quarterly deliveries. Quarterly revenue was 16.11 billion yuan, up 59.4% quarter-on-quarter, and the gross margin of the automotive business recovered to 10%.

Performance progress for the first quarter of 2025

Quarterly deliveries were 94,008 units, up 330.8% year-over-year and exceeding the upper end of expectations (original guidance of 91,000-93,000 units) by 2,410 units. Cumulative deliveries from January to April were 129,053 units, up 313.45% year-over-year. Quarterly revenue is expected to be between 15 billion and 15.7 billion yuan (Q1), up more than 129% year-over-year.

2.2. Revenue and Profit Analysis: [2]

(1) Revenue Growth and Fluctuations: In 2021, XPENG Motors achieved a revenue of 20.99 billion yuan, with a year-on-year growth rate as high as 360%, primarily driven by the strong market performance of the P7 and P5 models. However, in 2022, due to poor market response for the G9 model and supply chain issues, the revenue growth rate slowed down. In 2023, through product line adjustments (such as launching the X9 model) and cost control and efficiency improvement measures,

revenue gradually resumed its growth. Data from the first quarter of 2024 shows that revenue grew by over 50% year-on-year (data source: XPENG Motors financial report).

(2) Gross Margin and Net Profit Analysis: From 2021 to 2023, the gross margin fluctuated significantly (with a gross margin of-8.6% in 2023), mainly due to rising raw material costs and price pressures from market competition. It is expected that in 2024, through economies of scale and technological optimization, the gross margin will recover to over 10%. In terms of net profit, there have been losses for three consecutive years, but the loss amounts have decreased year by year, indicating that cost control measures are beginning to show results.

(3) Cash flow analysis: The cash flow generated by operating activities continues to improve, and the balance of cash and cash equivalents in the first quarter of 2024 exceeds 30 billion yuan, providing a solid financial guarantee for subsequent R&D activities and business expansion.

(4) Analysis of R&D investment and cost structure: [5]

XPENG Motors continues to maintain a high level of R&D investment (R&D expenses accounted for 10% of the operating revenue in 2023), focusing on autonomous driving (XNGP system), battery technology and intelligent cockpit. Although the R&D intensity is higher than the industry average, the company needs to seek a balance between investment and profit.

According to the latest operating data released by XPENG Motors, despite the fierce market competition and continuous increase in R&D investment, the company still maintains a stable growth trend. The significant improvement of sales performance and the gradual expansion of market share reflect the recognition and competitiveness of its products in the market.

2.3. Core Strategic Direction of XPENG Motors: [3]

2.3.1. Product power concentration, technology popularization and globalization

Economic Intelligent Driving Vehicle Market Share Increase: It is expected that by 2024, the economic models launched by XPENG Motors, the MONA M03 (starting price at 119,800 yuan) and P7+ (starting price at 186,800 yuan), will become the main drivers of growth. Leveraging its "L2 intelligent driving + high cost-effectiveness" advantage, the monthly sales of the MONA M03 have stabilized above 15,000 units; while the P7+, offering laser radar and advanced intelligent driving features at 70% of the Model 3 price, has seen deliveries exceed 20,000 units within two months.

2.3.2. Product strategy: blockbuster drive and high frequency iteration

High-frequency Launches and Full Price Coverage: By 2025, plans include the introduction of seven new models (including the extended-range SUV G01) and multiple modified models, aiming to comprehensively cover the market from 100,000 to 300,000 yuan. Each quarter will feature significant new products, such as the G7 mid-size SUV and the E29 coupe, forming a dual-track strategy of "high volume at low prices + high-end brand building."

2.3.3. Technology layout: the deep integration of artificial intelligence and autonomous driving technology

Implementation of L3 Autonomous Driving Technology: The deployment of full-scene L3 autonomous driving technology is expected to be achieved in the second half of 2025, marking the arrival of the "iPhone4 era for AI vehicles." To this end, the company will invest 4.5 billion RMB in research and development funds to drive breakthrough progress in technology. Technology Popularization and Ecosystem Synergy: Plans are underway to extend urban-level navigation assistance (NOA) functions to models priced below 150,000 RMB, and to collaborate with Volkswagen Group on the development of electronic and electrical architecture (EEA) to increase the proportion of technology licensing revenue in the company's total revenue to 12%. Additionally,

the company is actively exploring the migration of humanoid robot technology into the automotive sector to build competitive barriers within the artificial intelligence ecosystem.

2.3.4. Globalization strategy: localization of production and market penetration

Southeast Asia and Europe Dual Expansion Strategy: Plans to launch localized production in Indonesia (G6, X9) by 2025, with operations spanning over 60 countries and regions. In the European market, the G9 (priced at €50,000) will target the high-end segment; in Southeast Asia, the X9 (Magic Space) product line will meet the needs of household users. The goal is to achieve a 50% to 57% share of overseas sales by 2030. Starting from 2025, a supercharger network will be established in Southeast Asia, expanding to Asia, Europe, and Australia, building an "affordable + extensive coverage" energy supply system to enhance user experience for overseas customers.

2.4. Strategic Planning Outlook: [4]

The latest operating data of XPENG Motors shows that despite the dual pressures of market competition and R&D investment, the company has maintained a steady development trend. Sales have increased year by year, and the market share has gradually expanded, demonstrating the market recognition and competitiveness of its products. However, the net profit margin has fluctuated, reflecting that the company still needs to further strengthen its cost control and profitability.

XPENG Motors' current strategy focuses on technological innovation and market expansion. The company continuously invests in R&D resources to enhance the technical capabilities of autonomous driving and intelligent operating systems, aiming to maintain a leading position in technology. At the same time, the company actively expands both domestic and international markets, strengthens cooperation with partners, and enhances brand awareness and influence.

According to the current strategic operations, XPENG Motors has achieved significant results in technological innovation, launching several competitive new products. Market expansion has also made positive progress, with sales channels both domestically and internationally continuously expanding. However, due to the high costs of R&D investment and market expansion, the company's profitability has been somewhat affected [6].

In the face of current challenges and opportunities, XPENG Motors needs to explore a path of sustainable growth. Future directions will focus on improving profitability, optimizing cost control, enhancing technological innovation, and expanding the market. This will provide important evidence for the specific analysis and recommendations in the third section.

3. XPENG MOTORS SWOT ANALYSIS

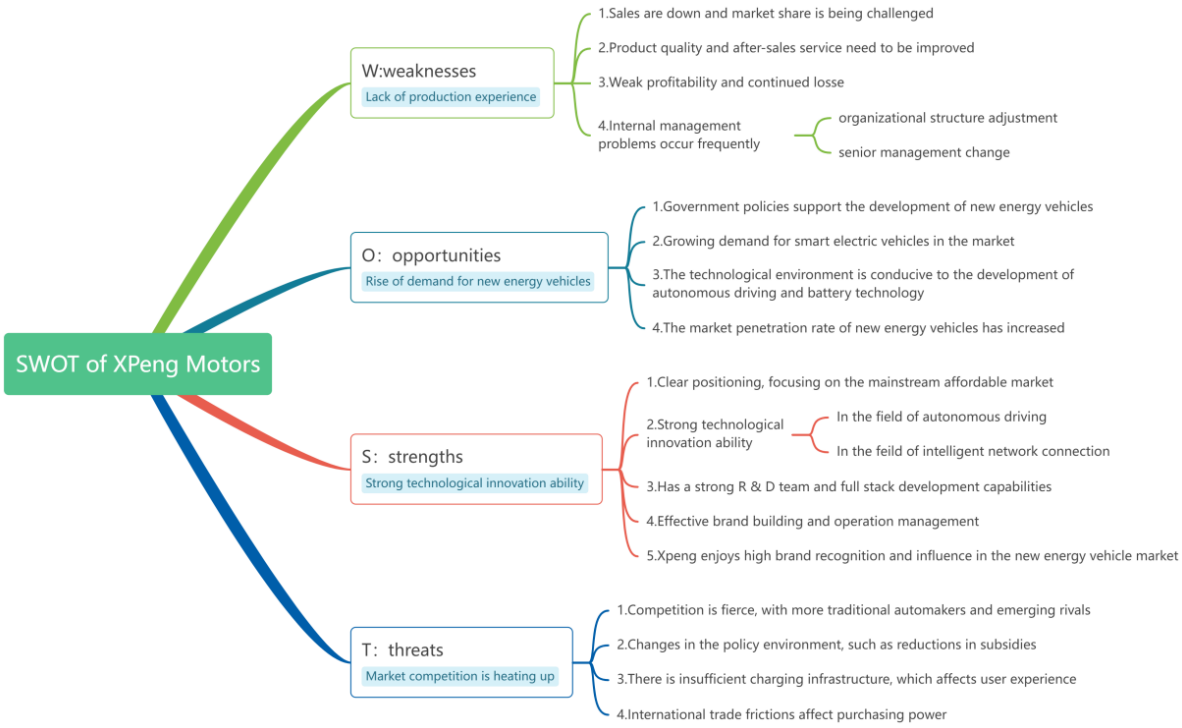

Figure 1. SWOT analysis of XPENG Motors

This study will conduct SWOT analysis on XPENG Motors, and discuss it from four dimensions of technology, market, product line and challenge in combination with industry development trend and enterprise strategy:

3.1. Advantages (Strength)

3.1.1. Technology accumulation and product differentiation

XPeng Motors has shown significant competitive advantages in key areas such as autonomous driving and intelligent interaction. Taking the P7 model as an example, its XNGP intelligent auxiliary driving system supports automatic parking, low-speed following and other functions, and is in the leading position in the industry in terms of algorithm stability.

In terms of battery technology, XPENG Motors uses Ningde Times battery with a range of 2 million kilometers (service life of 16 years), which effectively alleviates users' concerns about battery life.

The X9 MPV model launched in 2023 integrates advanced technologies such as rear-wheel steering and dual-chamber air suspension, realizing the perfect combination of practicality and intelligence, and becoming a benchmark product in the market segment.

3.1.2. Market performance and user base

In 2021, the delivery volume of XPENG Motors reached 98,000 units, a year-on-year increase of 3.6 times, among which the P7 model contributed 62% of the sales volume, becoming the sales champion of new forces.

In the fourth quarter of 2023, deliveries increased by 171% year on year, with an average monthly delivery of more than 20,000 units, demonstrating the strong resilience of the market.

Users 'feedback on intelligent functions is extremely positive. The user selection rate of P7's XPILOT system is as high as 98%, and the optional rate of intelligent cockpit is 40%.

3.1.3. Global layout and brand influence

Products of XPENG Motors have covered the Chinese and European markets, and it plans to launch five global models in 2023, aiming to become a global leading brand in the field of intelligent electric vehicles.

In 2020, the brand value of XPENG Motors will exceed 100 billion yuan, and the accumulation of user trust and reputation will lay a solid foundation for subsequent market breakthroughs.

3.2. Disadvantages (Weakness)

3.2.1. Product power and market strategy adjustment

Due to the complex configuration and high pricing of G9 models, the market reputation has declined, and some consumers choose to cancel their orders, which reveals the mismatch between product positioning and market demand.

There are loopholes in supply chain management, which leads to consumer rights protection caused by battery problems of early G3 models and affects the brand image.

3.2.2. Organizational structure and cost pressure

The sales target in 2022 was not achieved (only 120,000 vehicles were completed), and the internal management was chaotic, so it was necessary to optimize the efficiency through organizational structure adjustment (such as the establishment of strategic and technical planning modules).

In 2023, the gross profit rate is-8.6%, and the proportion of R&D and manufacturing costs is too high, so it is necessary to reduce the cost through large-scale production.

3.2.3. Market competition and policy challenges

In 2022, in the new force camp, the sales growth of XPENGP7 slowed down, and it was squeezed by models such as Nezha and Leapmotor, resulting in fluctuations in market share.

Insufficient charging infrastructure and inconsistent battery standards still restrict consumer choices, so it is necessary to continue to lay out charging networks and changing stations.

3.3. Opportunities (Opportunity)

3.3.1. Technology iteration and scenario expansion

The autonomous driving technology will be upgraded from L2+ to L3+, and the urban NGP function is planned to be implemented in 2023 to enhance product competitiveness.

Turn to the high-end market, seize the price band of 300,000 + through G9 and X9 MPV models, and form differentiated competition with Tesla and NIO.

3.3.2. Policy and industry synergy

The purchase tax exemption policy for new energy vehicles will be extended in 2024, and models such as XPENGP7i and G6 can further reduce the purchase threshold for consumers.

Cooperate with Didi, Volkswagen and other enterprises to explore the "rental and sale combination" model and improve the after-sales service network.

3.3.3. User demand and market recovery

Consumers' dual demand for "technology + practicality": The intelligent driving of P7, the endurance advantage of P5, and the seven-seat space of X9 cover different market segments.

After bottoming out in 2023, consumers' confidence in the XPENG brand recovered, and the order volume of P7i and G6 models increased significantly.

3.4. Threats (Threat)

3.4.1. Market competition and technical barriers

In the field of autonomous driving and battery technology, Tesla, NIO, Ideal and other brands continue to carry out technological iteration, which squeezes the technological advantages of XPENG.

Traditional car companies (such as BYD and Geely) accelerate the layout of new energy, and XPENG needs to cope with the double competitive pressure of "new forces + traditional car companies".

3.4.2. Supply chain and cost pressure

Core components such as batteries and motors rely on external suppliers (such as Contemporary Amperex Technology Co., Ltd and Huawei), facing the risk of supply chain interruption.

In 2023, R&D investment will account for 10% of revenue, and a balance needs to be sought between technology investment and profit pressure.

3.4.3. Policy uncertainty

Subsidies for new energy vehicles are gradually declining, and models such as XPENGP7i may be affected by price-sensitive users.

Under the "dual carbon" target in 2024, the industry needs to deal with policy challenges such as charging standards and carbon emissions.

3.5. Strategic Adjustment and Response

Organizational structure optimization: In 2023, three modules of "strategy, technology and marketing" were established to improve decision-making efficiency by streamlining processes.

Product line remodeling: Focusing on the dual core of "intelligent + electric", we plan to launch five global models from 2023 to 2025, covering the price range of 150,000 to 400,000 yuan.

Supply chain coordination: Strengthen the relationship with strategic partners such as Ningde Times and Huawei to ensure the supply of key components such as batteries and motors.

Deepening user operation: Build an "integrated and multi-touchpoint" service system, and enhance user stickiness through APP and offline experience centers.

To sum up, XPENG Motors needs to build competitive advantages in the three dimensions of intelligence, electrification and globalization through technological breakthroughs, product differentiation and supply chain integration, while coping with market fluctuations and policy challenges to achieve sustainable growth [7].

4. SUMMARY AND FUTURE OUTLOOK

This study focuses on the development strategies of Chinese new energy vehicle companies in achieving the "dual carbon" goals, particularly highlighting the practices of XPENG Motors in technological innovation, market expansion, and globalization. [8] It delves into how these companies address market competition and policy challenges to achieve sustainable development. The importance of this topic lies in the fact that the new energy vehicle industry is not only a critical area for China's green and low-carbon transition but also a core domain in global market competition. A deep dive into the development model of the new energy vehicle industry is crucial for driving technological innovation and optimizing market structure. By comparing and analyzing peers such as BYD and Li Auto, the unique aspects of XPENG Motors' technological innovation (such as the XNGP system) and its market performance are highlighted. The literature review also covers export data of new energy vehicles and assessments of international market competitiveness, providing a

solid theoretical foundation and empirical support for a thorough analysis of XPENG Motors' strategic positioning. XPENG Motors should adopt "technology + cost + globalization" as its core strategy, enhancing profitability through cost reduction, efficiency improvement, and product iteration in the short term, while building a differentiated competitive advantage over the medium to long term by leveraging autonomous driving and intelligent technologies. At the same time, the company needs to balance aggressive expansion with maintaining financial stability, seizing opportunities as the market penetration rate of new energy vehicles increases, and achieving a strategic transformation from an "emerging force" to a "major automaker."

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