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Strategic analysis and sustainable strategic development: The case of Google

Prepared for: Robyn Griffiths

Written by: Jingwei Ge

Student ID: 2400192

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Executive Summary

Through a comprehensive analysis of Google's strategy, this report evaluates its competitive position and sustainable development strategy in the modern technology industry. According to Wen (2022), studies say that as the world's largest search engine and advertising platform, Google also occupies an important position in cloud computing, artificial intelligence, intelligent hardware and other fields. With strong technological innovation capabilities, huge user data resources and global market layout, Google is in a leading position in the global technology industry. However, as market competition intensifies and the global regulatory environment becomes increasingly stringent, Google faces increasing challenges (Wan,2022).

The report explores the macroeconomic factors affecting Google through PESTEL analysis, and uses Porter's Five Forces model to analyze the competitive landscape and identify market opportunities and threats. At the same time, we use resource base perspective (RBV) and value chain analysis

to evaluate Google's core resources and operational efficiency, and reveal its internal and external strengths and challenges through SWOT analysis.

Contents	
Executive Summary	2
introduction	5
1.0 External analysis.....	6
1.1 PESTEL analysis.....	6
1.2 Porter's Five Forces Model.....	8
2.0 Internal analysis	9
2.1 Resource-based Perspective (RBV).....	9
2.2 Value chain analysis	11
2.3 SWOT analysis.....	13
3.0 Strategy formulation and competitive positioning.....	16
3.1 Existing strategic positioning	16
3.2 The application of ansof matrix.....	17
3.3 Competitive positioning analysis	18
4.0 Sustainable development and strategic recommendations	19
4.1 Sustainable development assessment	19
4.2 Development strategy proposal.....	20
5.0 Conclusion	23
Reference	25

introduction

According to Pratico (2021), studies say that Google dominates the fields of search, advertising, cloud computing and AI, and expands into innovative fields such as automation to form a diversified business model. Global economic changes and technological developments bring strategic challenges and opportunities (Pratico, 2021).

According to Ghobakhloo (2022), studies say that Google needs to continuously adjust its strategy to cope with technological, market and social changes. In the Chinese market, companies face challenges of economic competition, policy restrictions and technological innovation, requiring precise planning and execution (Ghobakhloo, 2022).

1.0 External analysis

1.1 PESTEL analysis

According to Fedushko (2021), studies say that global regulatory policies have a significant impact on Google's operations, especially those related to privacy protection, data security, and cross-border data flows (Fedushko,2021).

Economic: According to Lohrke (2022), studies say that global economic uncertainty, inflationary pressure and the slowdown of the Chinese market may affect advertising revenue. In addition, the high investment in cloud computing and AI puts pressure on Google to return. (Lohrke,2022).

Social: According to Capobianco (2021), studies say artificial intelligence and other technologies have changed consumer demand, but users' concern about data privacy has intensified, and Google needs to strengthen brand trust and compliance strategies (Capobianco, 2021).

Technological: According to Kaur (2025), studies say Technological innovation brings opportunities and challenges, and Google needs to continue to invest in AI and automation, while addressing AI ethical issues to ensure responsible application of technology (Kaur (2025)).

Environmental: According to Medne (2022), studies say with increasingly stringent sustainability requirements, Google needs to strengthen green energy, carbon neutrality and environmental practices to reduce environmental impact (Medne (2022)).

Legal: According to De (2022), studies say Google faces a complex global legal environment, such as EU data regulations, privacy protection, and market competition law, increasing the compliance challenges of its product and technology expansion (De,2022).

1.2 Porter's Five Forces Model

1. Threats from industry competitors: According to Purnamasari (2023), studies say that Google's main competitors include Amazon (cloud computing), Microsoft (search and AI), Meta (advertising), Apple (mobile ecosystem) and so on. With the rapid growth of AI and cloud computing markets, the industry is becoming increasingly competitive. In addition, Google needs continuous technological innovation to cope with market competition and achieve sustainable growth (Purnamasari,2023).

2. Bargaining power of buyers: According to Tu (2024), studies say that with the increasing number of technology companies, market competition is intensified, so that customers can choose multiple suppliers in terms of price and service, which improves the bargaining power of buyers (Tu,2024).

3. Threat of substitutes: According to Jaipong (2023), studies say that despite

Google's leading position in search and advertising, the range of choices available to customers gradually increases with the rise of emerging technologies and competitors (Jaipong,2023).

4. Threat of new entrants: According to Wood (2021), studies say the rapid development of technologies such as cloud computing and artificial intelligence makes it possible for emerging companies to enter the market quickly, but due to Google's leading position in technology research and development and market share, new entrants face high barriers to entry (Wood,2021).

2.0 Internal analysis

2.1 Resource-based Perspective (RBV)

According to Birru (2022), studies say the resource-based Perspective (RBV) emphasizes understanding a company's competitive advantage by evaluating its unique resources and capabilities (Birru,2022).

1. Infrastructure and financial strength: According to Cuthbertson (2022), studies say that Google has the world's most advanced data center and Cloud computing infrastructure (Google Cloud), which provides support for search engine, AI computing and enterprise services. In addition, the company is well funded and has long held a leading position in advertising revenue, allowing it to continue to make R&D and strategic investments in technologies such as autonomous driving (Waymo) and augmented reality (AR) (Cuthbertson,2022).

2. Core competitiveness and technical barriers: According to Kurhayadi (2022), studies say that Google attracts many users with its brand influence, and the search, YouTube and Android ecosystems are widely covered. It has accumulated many patents in the fields of AI, natural language processing and search algorithms, building technical barriers. Vast data resources covering search, location, and AD interactions improve AD accuracy and support AI optimization and personalization (Kurhayadi,2022).

3. Innovation-driven and global operation: According to Lee (2023), studies say that in terms of organizational capability, Google's innovation culture promotes continuous technological breakthroughs, and its flexible enterprise management mode enables it to maintain agile competitiveness in the global market. In addition, the company has multiple R&D centers and localized operation teams around the world to adapt to different market needs and further consolidate its competitive position (Lee, 2023).

2.2 Value chain analysis

According to Swink (2022), studies say that value chain analysis is helpful to evaluate Google's operational efficiency and identify its competitive advantages and optimization space in different links. Google relies on technological innovation, data resources and platform ecology to optimize operations in multiple value chain links to improve efficiency and market competitiveness

(Swink, 2022).

1. Internal logistics and data management: According to Hanaka (2022), studies say that Google relies on optimized data center network to reduce energy consumption and cost through efficient server architecture and cooling technology. A global distributed cloud infrastructure enhances data transfer speed and storage capabilities to improve operational efficiency (Hanaka,2022).

2. Advertising and marketing: Google Ads combines AI algorithms to optimize advertising delivery and improve ROI. Automated bidding systems increase AD accuracy, and platforms such as YouTube and Google Play expand their reach. However, privacy regulations such as GDPR can reduce the effectiveness of personalized advertising and affect conversion rates.

3. Procurement and partnership: According to Hu (2022), studies say that Google reduces the cost of hardware (such as Pixel and Nest) by optimizing

the supply chain, and cooperates with chip manufacturers such as Qualcomm to improve product performance. At the same time, cooperation with third-party developers promotes the expansion of Google Cloud and Android ecosystem and enhances market competitiveness (Hu,2022).

2.3 SWOT analysis

1. Strengths:

Strong brand influence: Google's brand awareness and influence on a global scale make it maintain an advantage in the fierce market competition.

-- Huge user base: Through search engine, Gmail and other products, Google has accumulated billions of active users around the world, forming a powerful data resource.

2. Weaknesses:

-- Over-reliance on advertising revenue: According to Kanemoto (2023), studies

say that Google's income mainly comes from advertising. Although this model is very successful, over-reliance on advertising may expose the company to numerous risks such as market fluctuations and intensified competition (Kanemoto,2023).

Privacy and data protection issues: According to Rezaie (2021), studies say that with the gradual improvement of data privacy laws in various countries, Google is faced with more and more legal and moral challenges, which is very unfavorable for its global expansion (Rezaie, 2021).

3. Opportunities :

Market opportunities for AI and automation: According to Chalak (2022), studies say that Google can create a huge market demand in the future by developing a business model through numerous investments in artificial intelligence and automation (Chalak,2022).

-- Expansion of emerging markets: According to Castaneda (2022), studies say that with the rapid development of information globalization, Google can further expand its products and services in emerging markets such as Asia and Africa (Castaneda,2022).

4. Threats:

According to Syerov (2021), studies say that Google faces strong competition from Amazon, Facebook and other global technology companies in areas such as cloud computing and artificial intelligence. These powerful rivals could threaten Google's existing market share (Syerov,2021).

-- Technical security and ethical issues: According to Mubarik (2022), studies say that with the wide application of AI, Google faces great challenges in privacy protection, AI ethics and moral use (Mubarik,2022).

3.0 Strategy formulation and competitive positioning

3.1 Existing strategic positioning

According to Perrotta (2021), studies say that Google maintains its lead by relying on technological innovation, market penetration and global expansion, and its core business covers search, advertising, cloud computing, AI and intelligent hardware, leading the market by virtue of its technological and data advantages. The company adopts a differentiation strategy, relying on search algorithms, advertising technology, and AI research and development to remain competitive (Perrotta, 2021). In addition, Google is promoting smart devices and optimizing Internet services in India, Africa and other markets to expand the user base, but global expansion faces challenges such as privacy regulations such as GDPR, increasing market competition, and dependence on advertising revenue (Dell'Era, 2021).

3.2 The application of ansov matrix

1. Market penetration: According to Gulson (2021), studies say that Google relies on continuous optimization of search engine and advertising algorithm to improve user experience, while expanding the advertising market through YouTube and Google Ads. However, as privacy policies tighten (e.g., iOS devices restrict third-party cookies), advertising growth may be limited and companies need to explore new revenue streams (Gulson,2021).

2. Market development: According to Jia (2021), studies say that Google has actively expanded into emerging markets in recent years, such as investing in mobile payments (Google Pay) and low-cost smartphones (Android Go) in India. However, cultural and policy differences in regional markets, government regulatory restrictions (such as the China market ban) can affect its expansion plans. (Jia,2021).

3. Product development: According to Husaeni (2022), studies say that Google

promotes new product innovation through AI-related technologies (such as Bard and Google Assistant), while laying out autonomous driving (Waymo) and augmented reality (AR). However, the research and development cost of these cutting-edge technologies is high, and the commercialization process is slow, and there is a high investment risk. (Husaeni,2022).

3.3 Competitive positioning analysis

According to Pratico (2021), studies say that Google adopts a technology-driven + platform ecological strategy to compete with Amazon, Microsoft and Meta. It dominates the search advertising market, but faces challenges such as AWS and Azure in cloud computing and AI. Tighter global antitrust regulation could limit its market dominance(Pratico, 2021).

Google's strategic expansion brings growth opportunities, but it also faces multiple risks such as data privacy, technical barriers, and regulatory

compliance. The company needs to optimize the business structure while maintaining innovation to reduce the uncertainties that may be encountered in the process of strategic expansion.

4.0 Sustainable development and strategic recommendations

4.1 Sustainable development assessment

Google has made significant progress on sustainability, with its data centers running on 100% renewable energy and committing to "carbon-free energy operations" by 2030. Whittington (2023) argues that Google is driving industry transformation through green technology investments and renewable energy projects. However, Morrison (2020) questions whether its AI-driven efficiency initiatives will reduce energy consumption, arguing that high energy consumption in data centers may simply be transferred from the enterprise side to the wider grid, not necessarily reducing the overall carbon footprint.

In addition, Google's business model still relies heavily on digital advertising and data analytics, with privacy concerns and regulatory scrutiny. Johnson (2022) criticized its green marketing as potentially "greenwashing", arguing that Google exaggerated its environmental achievements in its sustainability statements and lacked transparency about the resource consumption of AI algorithms. So, despite Google's progress in green technology, its sustainability strategy still faces the challenge of balancing its business model with its environmental goals.

4.2 Development strategy proposal

1. Optimize data center energy efficiency and promote green computing

Google is making progress on renewable energy, but AI and cloud computing still consume a lot of energy. Companies should invest in technologies such as low-power AI chips and liquid cooling to improve data center energy efficiency.

In addition, the launch of "green cloud computing" services, using AI to optimize

energy consumption, and provide corporate customers with carbon emission tracking tools to enhance competitiveness.

2. Strengthen sustainable supply chain management

Google, which relies on a global supply chain for smart hardware and cloud infrastructure, should push suppliers to adopt recyclable materials and reduce carbon emissions. At the same time, by localizing production and optimizing logistics, we will reduce the environmental impact of cross-border transportation and enhance the resilience of the supply chain to cope with future environmental regulations and market changes.

3. Deal with regulation and social responsibility

As the global focus on data privacy and sustainability increases, Google needs to improve its ESG (Environmental, Social, governance) transparency, strengthen its green reporting disclosures, and ensure that its environmental commitments stand up to scrutiny. At the same time, through global

partnerships, participate in policy development to shape an enabling environment for sustainable development, thereby reducing future regulatory pressures.

5.0 Conclusion

Through the strategic analysis of Google, the key to Google's success lies in continuous technological innovation, strong brand influence and extensive global market coverage. According to Zhao (2021), studies say that through differentiation strategy and global layout, Google dominates search engine and advertising, and expands to cloud computing, artificial intelligence and intelligent hardware, consolidating its leading position in the technology industry. However, Google faces the challenge of fierce market competition, global regulatory changes, and balancing business growth with social responsibility (Zhao,2021).

According to Sætra (2023), studies say that Google has made certain progress in terms of sustainable development, especially in the fields of carbon neutrality, green technology and social responsibility. However, Google still needs to further strengthen the research and development of green technologies, promote the popularization of sustainable products and services, and promote

stricter compliance management globally (Sætra,2023).

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