

Analysis of Siemens' Business Model Using SWOT

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Abstract: This paper takes Siemens AG as the research object to explore its business model, development challenges and corresponding risk management strategies. With the widespread presence of Siemens household appliances in daily life as the entry point, the study first sorts out the theoretical basis of business models, including their definition, core objectives, significance and four key elements. It then applies SWOT analysis to examine Apple Inc. 's business model and risk management practices as a reference, and subsequently conducts an in-depth analysis of Siemens' business model, covering its diversified business layout in energy, infrastructure, healthcare and other fields, digital transformation practices such as the Xcelerator platform, and customer-oriented service strategies. The paper identifies the main risks faced by Siemens, including technological, market, financial and legal risks, and summarizes the company's targeted risk management measures. Finally, the study concludes with key findings on Siemens' sustainable growth-driven strategies, notes research limitations related to time constraints and data timeliness, and proposes future research directions regarding adaptive adjustments to its business model amid technological and market changes.

Keywords: Siemens; business model; SWOT analysis; risk management; digital transformation

1. Introduction

1.1. Problem

With the development of time and science and technology, people's pursuit of life continues to improve. Dishwashers, coffee makers, toasters, etc. appear in our daily lives. I have also noticed that many brands of new household appliances are Siemens. This phenomenon interests me. I don't understand it, because in my opinion, Haier and Casati are the best household appliance brands in China. Why do people like to buy Siemens household appliances? What are the advantages of Siemens household appliances compared to other brands?

1.2. Objectives

The aim of this seminar paper is to give the reader a clear understanding of the tasks, the business model of Siemens. In this context, three central questions arise: What is the business model of Siemens? Were there difficulties in the business development of Siemens and how were they solved? These three research questions will be examined in detail in this seminar paper.

1.3. Structure of the Work

The first chapter of this seminar paper has three subsections. The problem statement serves as an introduction and provides a rough description of the background of the seminar paper and the topics and content to be analyzed. The objectives describe the goals

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and research problems of the seminar paper, and the section entitled "Structure of the paper" presents the general structure of the seminar paper and the general content of each chapter [1].

The second chapter comprises the theoretical part, which is divided into three subsections, namely 2.1 and 2.2. Chapter 2.1 is divided into two further subsections, which explain the competencies, the business model, the definition of a business model, the objectives and the significance of a business model. Chapter 2.2 deals with the central elements of a business model.

The third chapter covers the state of research. Chapter 3.1 describes SWOT analysis. Chapter 3.2, The Application of SWOT Analysis in the Electrical Appliance Industry, provides an example of Apple's business model and analyses this business model using the SWOT model [2]. Chapter 3.3 is divided into two subsections, each of which analyses the necessity of risk management and the relationship between business models and risk management. Finally, Chapter 3.4 analyses the interim conclusion.

The fourth chapter examines and discusses the tasks and business model of Siemens in four subsections. Chapter 4.1 describes the Siemens business model, and Chapter 4.2 analyses it. Chapter 4.3 describes current risks for Siemens, and Chapter 4.4 presents Siemens' risk management.

The final chapter is a summary, divided into 5.1, 5.2 and 5.3. Chapter 5.1 summarises the entire seminar paper by briefly presenting the most important parts of each chapter once again. Chapter 5.2 describes the limitations of research possibilities, and Chapter 5.3 follows the limitations of this paper as outlined in Chapter 5.2 and then poses an open question [3].

2. Theoretical Foundations

2.1. Key Concepts of Business Models

2.1.1. Definition of a Business Model

The concept of a business model can be clearly explained by looking at the etymological derivation of the two constituent parts of the word, 'model' and 'business'. So, if we combine our observations on the conceptual components "company" and 'model', we already have a preliminary understanding of the content and nature of the business model concept. Economics is an abstract, vague term. Modelling offers a systematic approach to understanding and analyzing business processes [4]. For example, the Business Model Canvas (BMC) provides a clear framework that enables companies to clearly define and demonstrate their core elements, including customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, partners and cost structures. It helps companies to view their business as a whole, rather than focusing solely on individual business activities. To date, there have been numerous inconsistent interpretations of the term itself in the literature. Furthermore, the common understanding of the constituent building blocks of business models is just as diverse and sometimes even contradictory. This diversity, which remains inherent in the concept of the business model, has dominated business management discussions to this day. But there are indeed some general characteristics of the business model [5]. At a very generic level, business models can be characterized as the logic by which an organization ensures its financial viability. In principle, a business model represents 'an applied business concept that serves to describe, analyses and develop the basic logic of entrepreneurial performance' [DOLE]. It aggregates complexity management, simplifies value-adding processes, functions and interactions for the purpose of creating customer value, securing competitive advantage and generating commercial revenue in a transparent schematic architecture. In addition, a business model describes the revenue and cost structures that arise in the creation of customer value [TEECE]. According to Teece, a business model also articulates how the revenues generated from the creation of customer value are converted into corporate profits [6].

2.1.2. Objectives and Significance of a Business Model

The economy is experiencing rapid growth, and many household appliance brands now offer highly similar products. Under these conditions, low-price strategies alone are no longer sufficient to meet profit requirements. As a result, companies must rely on well-designed business models to support product sales and marketing in order to achieve sustainable development goals. A key function of a business model lies in its ability to identify the value potential embedded in new technologies and transform this potential into tangible market outcomes [7]. An effective business model accurately recognizes customer needs and problems, provides appropriate solutions, and ultimately converts value creation into profit. For this reason, business models often become the central focus when firms seek to build long-term profitability.

From a business model perspective, three main advantages can be identified. First, it enables a systematic analysis of the existing business model by presenting a firm's core activities and interrelationships in a simplified and structured manner. This approach highlights the essential components of the business model and their internal logic, helping to clarify specific elements while ensuring consistency and integration across different operational processes. Second, the business model perspective supports the planning and development of future business models, allowing companies to refine current practices and adapt their models in response to changing market conditions [8]. Third, it facilitates communication with stakeholders. By using a business model framework, firms can clearly and coherently explain their business activities and underlying value creation mechanisms to both internal and external stakeholders. In particular, the pathways through which value is created and captured in support of organizational or corporate strategies can be conveyed in a more transparent and convincing manner.

2.2. Four Key Elements of a Business Model

A business model is a concise description of your business that focuses on the essentials. This model clearly illustrates what you want to achieve. In the business model, you describe four key things:

1. Customers: Who are our target customers?
2. Value proposition: What do we offer our customers?
3. Value chain: How do we manufacture our products?
4. Profit mechanisms: Why does a particular business model generate profits?

The first element describes the promising target group: which group would be most likely to adopt this product first. The customer is at the heart of every business model!

The second element describes what you want to do for your customers: Why should they be enthusiastic about your company? The elements of the value proposition include the two basic elements of customers and benefits [9].

The third element is the value chain: you must implement your value proposition through a series of processes and activities. This element includes components such as delivery, distribution and communication, production, core competencies and key partners. For example: what is the infrastructure like, what is the market like and who are your competitors? What values do you want to represent for your distinctive corporate spirit? These processes and activities, as well as the associated resources and qualifications, including coordination based on the company's value chain, form the third aspect of business model design.

The fourth element is the profitability mechanism, which encompasses the cost components and the mechanism for generating profits and describes the reasons why the business model is ultimately economically viable. It answers the central question that every company must answer, namely: How do we generate profits for our shareholders and stakeholders? Record the key revenue items and provide details of your revenue model. For example, do you have a subscription model, do you sell products directly to customers, or do you earn a commission on the sale of certain products, such as...

3. State of Research

This chapter explains SWOT and PEST analysis and illustrates the application of these two analyses in the field of computing.

3.1. SWOT Analysis

SWOT is a very typical model in economics. SWOT comes from English and stands for strengths, weaknesses, opportunities and threats.

It has also proven useful to combine the results of environmental and business analysis in a SWOT analysis. This involves taking the strengths and weaknesses of your own company from the business analysis and the opportunities and threats of the markets from the environmental analysis. As illustrated in Figure 1, the SWOT analysis helps companies identify their businesses and environments that are crucial for understanding and improving their business model [10].

	STRENGTHS Positive characteristics and advantages of the issue, situation, or technique	WEAKNESSES Negative characteristics and disadvantages of the issue, situation, or technique
OPPORTUNITIES Factors, situations that can benefit, enhance or improve the issue, situation, or technique	S-O Strategy/Analysis <i>Using strengths to take advantage of opportunities</i>	W-O Strategy/Analysis <i>Overcoming weaknesses by taking advantage of opportunities</i>
THREATS Factors, situations that can hinder the issue, situation, or technique	S-T Strategy/Analysis <i>Using strengths to avoid threats</i>	W-T Strategy/Analysis <i>Minimize weaknesses and avoid threats</i>

Figure 1. Corporate Strategy Combination Matrix.

The SWOT model identifies four strategic directions (recommended actions):

1. SO strategy: New opportunities by increasing strengths.
2. ST strategy: Lower risks by increasing strengths.
3. WO strategy: New opportunities by reducing weaknesses.
4. WT strategy: Lower risks by reducing weaknesses.

3.2. The Use of SWOT Analysis in the Electrical Appliance Industry

Apple Inc is a typical company in the electronics sector and has a multi-layered business model. Some of Apple's most important business models are presented below:

1. Business model for integrated product development and manufacturing:

Apple is known for its unique industrial design and outstanding product quality. For example, the iPhone, iPad, Mac, Apple Watch, AirPods and other products not only complement each other functionally, but are also seamlessly connected through iOS, iPad, Mac and other operating systems, forming a closely networked hardware ecosystem. Apple's multi-layered business strategies are all highly significant for its innovation model and extremely competitive within the industry. Users can easily synchronize their data between different devices, making their digital lives more convenient. However, this business model also has weaknesses, as it requires significant investment in research and development and supply chain management [11].

However, every business model is subject to risks that can arise from changes in the external environment, internal operational disruptions and other unforeseen factors. Increasing competitive pressure from other tech giants (e.g. Samsung, Huawei, Google)

could reduce Apple's market share. Apple can also seize its own opportunity because of this risk. Apple can explore emerging markets such as China and India, which will help to increase its user base and market share.

2. Business models for software and services:

Expanding revenue streams by offering a wide range of software and digital services to complement revenue from hardware sales. These include services such as the App Store, Apple Music, Apple TV+, iCloud and Apple Arcade [12].

The Apple brand enjoys a high level of trust worldwide, which helps users subscribe to the company's services. Secondly, Apple's hardware devices (e.g. iPhone, iPad, Mac) have a large number of loyal users, who form a large potential user base for software and services. At the same time, Apple offers a broad platform for third-party developers through channels such as the App Store, thereby enriching its software ecosystem. This strategy of integrating hardware and software has not only increased user dependence on Apple products, but also provided Apple with a steady stream of software service revenue.

However, Apple's service is heavily dependent on users of its hardware devices, which limits the size of the potential market. At the same time, Apple's policy of charging a 30 per cent levy on apps and subscriptions in the App Store has caused dissatisfaction among developers, which formed the basis for an antitrust lawsuit against Apple. Therefore, Apple must continue to innovate to remain competitive or risk being overtaken by more innovative companies. Apple can use AI to improve and further develop the functionality and user-friendliness of existing services, such as health and fitness services and enterprise software solutions. At the same time, the company can expand its services and user base through strategic partnerships and acquisitions [13].

3. Strong retail network and customer service business model:

Apple has its own retail stores (Apple Stores) and online shops worldwide. The Apple Store is Apple's physical retail store around the world, where not only the entire range of Apple products is sold, but also customer service, technical support and product experience are offered. It provides customers with a completely new shopping experience. Online store: Online sales via the official website and app, offering a convenient shopping experience. With a two-channel strategy consisting of the Apple Store and the online store, Apple ensures high product visibility and user-friendliness. However, Apple Stores have high operating costs, including rent, labor and maintenance costs. In addition, Apple still has a limited presence in some emerging markets and developing regions and relies to a certain extent on brick-and-mortar stores for sales and brand promotion. Meanwhile, increasing competition from other technology companies and electronics manufacturers (e.g. Samsung, Huawei) could affect Apple's market share. Therefore, Apple should open more Apple Stores in emerging markets to increase its market share and brand influence. Apple can also collaborate with third-party vendors and telecommunications operators to expand distribution channels and market coverage. Online sales platforms and e-commerce can also be further developed to offer more convenient shopping methods.

3.3. Analysis of Risk Management in the Company

3.3.1. The Necessity of Risk Management

However, every business model is subject to risks that can arise from changes in the external environment, internal operational disruptions and other unforeseen factors. The risk is particularly evident in innovative business models. Failure is an integral part of disruptive and innovative business models, which are associated with a high degree of uncertainty and investment risk. Risk management and response strategies are therefore essential for companies, both to avoid risks and to take timely action when they occur. Companies can manage risks across multiple dimensions, including human resources, marketing, finance and legal.

3.3.2. Relationship between Business Models and Risk Management

In the history of Apple, there was still a major risk in the mid-1990s, as Apple was not coping well with operational and other problems at that time. This, coupled with management inconsistency, led to the company experiencing a serious financial deficit. In view of the risks Apple was facing, Jobs initiated a series of reforms to mitigate the risks and change the situation: 1. Reduction of the 15 products in development to 4 and abandonment of the low-end market; 2. Laying off part of the workforce, searching for the best and most suitable personnel; 3. Turning Microsoft from an enemy into a friend, obtaining investment from Microsoft and continuing to develop software for Apple terminals; 4. Reducing dependence on iPhone sales. Apple's business strategy shifted from dependence on iPhone sales to the service business and other areas. These measures addressed the risks that had developed since Apple's founding, changed the long-term low profitability, and laid the foundation for Apple's traditional focus on technological innovation and user experience, creating the conditions for Apple's future growth.

3.4. In Conclusion

The SWOT analysis shows that Apple's business model has significant advantages, including a large user base, strong brand value, excellent customer service, a global retail network and experience-oriented marketing. However, it also faces weaknesses and risks arising from high operating costs, heavy dependence on Apple device users, and fierce competition in the market. Apple must maintain its competitiveness and leadership position in the global market through continuous innovation, market expansion and strategic partnerships, constant improvement of the customer experience, and optimization of its online sales channels.

Since both Apple and Siemens have similarities in the high-tech sector, their business models can also be analyzed using SWOT.

4. Examples of Business Models in Practice at Siemens

4.1. Presentation of the Siemens Business Model

Siemens AG was founded in 1847 (with headquarters in Berlin and Munich) and is a technology company specializing in industry, infrastructure, transport and healthcare. From more energy-efficient factories, more resilient supply chains, smarter buildings and power grids to cleaner and more comfortable transportation and advanced healthcare systems, Siemens is committed to making technology work and creating value for its customers.

4.2. Analysis of Siemens' Business Model

This chapter uses SWOT analysis to examine the strengths, weaknesses, opportunities, threats and influencing factors of Siemens in order to illustrate the factors behind its success.

Siemens AG is a leading global industrial and technology company with a diversified business model in various sectors, including energy, healthcare, industrial automation, digital services and infrastructure solutions. The following is a detailed SWOT analysis of the Siemens business model:

1. Diversified business areas: When a company enters new markets with new products, this is referred to as a diversification strategy.

(1) In the Energy business area, Siemens offers complete solutions for the generation, transmission and distribution of energy. Siemens also invests in renewable energies and digital network solutions to help its customers improve energy efficiency and sustainability. The environmental impact of the Siemens business model is realized through energy savings on the customer side.

(2) In the infrastructure sector, Siemens offers intelligent transport systems, building technology, smart city solutions and security systems for urban infrastructure. This drives the digitalization and intelligence of cities.

However, particular risks in the development of new products include, for example, very high costs that may arise and a significant time requirement, which may lead to unforeseen delays. At the same time, competition is increasing in all areas and new competitors are emerging.

The rapid growth of markets such as smart manufacturing, renewable energy and digital healthcare offers enormous business opportunities. Siemens can actively introduce tailor-made solutions to meet the needs of different regions and industries. For example, Siemens offers tailor-made energy solutions for the African market that are tailored to local needs. And many countries have introduced measures and incentives to support Industry 4.0 and digital transformation, which Siemens can leverage to promote the use of its solutions worldwide.

2. Digitalisation and the Internet of Things: Siemens has introduced the Xcelerator as a Service solution, which brings Xcelerator to the cloud to create a new open digital business platform. This creates a comprehensive digital system that bridges the gap to the cloud in industry and makes digital transformation easier, faster and more widespread. Digital transformation has completely changed traditional business models, and embedding technologies in companies creates competitive advantages that contribute to improving business performance.

However, the digitalization and Internet of Things (IoT) sectors are becoming increasingly competitive, and rapid technological change can quickly render existing technologies and solutions obsolete. At the same time, data protection and security issues pose significant challenges. Siemens can maintain its competitive edge in the field of IoT and digitalization by continuously improving its technology and service quality. Examples include artificial intelligence and big data analytics to improve its MindSphere IoT platform. Data security and privacy should also be strengthened to ensure the security of IoT platforms and data through advanced technologies and protocols.

3. Services and solutions: Siemens focuses on customer relationship management to increase customer satisfaction and loyalty through high-quality services. However, large-scale corporate structures can lead to less efficient internal communication and decision-making. Siemens offers services across multiple areas and segments, ensuring that customers can fully leverage the benefits of its solutions. At the same time, by leveraging its global reach and business network, Siemens can quickly expand its advanced management solutions to all parts of the world and adapt them to local needs.

The SWOT analysis of Siemens' business model shows that Siemens' success lies in diversified business areas, digitalization and the Internet of Things, services and solutions. These strategies have helped Siemens remain competitive in the market and have contributed to the company's continuous growth and global expansion. However, the company is also faced with high investments required for innovation and technological developments. At the same time, competition is intensifying in all areas and new competitors are emerging. Siemens therefore faces the challenge of designing the innovation process and the resulting business model in such a way that it remains applicable even in a rapidly changing environment. Siemens must therefore actively introduce tailor-made solutions that meet the needs of different regions and industries.

4.3. Current Risks for Siemens

As a leading global technology company, Siemens faces a variety of risks to its business model. These risks include the following:

1. Technological risk:

Insufficient innovation: In a rapidly changing technological environment, failure to innovate in a timely manner can result in products and services lagging behind those of

competitors. In the course of digitalization, Siemens is exposed to increasing risks of cyber-attacks and data breaches.

2. Market risk:

Fluctuations in demand: Changes in global market demand and fluctuations in economic cycles can lead to uncertainty in sales.

3. Financial risks:

Foreign currency risk: As Siemens operates in a number of countries worldwide, exchange rate fluctuations can have a significant impact on the company's financial position.

4. Legal risks:

(1). Intellectual property risk: Business model innovation is usually accompanied by technological innovation and the use of trade secrets, which requires the protection and use of intellectual property rights. If a company fails to adequately protect its own intellectual property rights in the process of business model innovation, it may face legal disputes and competitive pressure.

(2). Competition law risks: Business model innovations often lead to changes in market competition, where companies run the risk of violating competition rules such as abuse of a dominant market position and monopolistic behavior.

4.4. Risk Management at Siemens

To counter these risks, Siemens must continuously monitor and assess its risk environment and take appropriate risk management measures:

1. Risk management in technology and innovation: Siemens must continue to invest in research and development and innovation management to drive the development of new technologies and products and avoid market risks due to technological backwardness.

2. Management of market and competitive risks:

Market research enables Siemens to gain insight into market and competitive risks. Identify market changes and trends in advance and adjust your strategies in a timely manner.

3. Financial risk management:

Siemens must maintain good cash flow to ensure sufficient financial flexibility in the event of changes in market conditions. Siemens has access to financial instruments to manage the risks associated with exchange rate and interest rate fluctuations in key currencies.

4. Legal risk management:

Siemens must comply with the relevant regulations and standards of the respective industry and market and ensure that all business activities comply with local regulations and international standards. Siemens can also protect the intellectual property rights to new technologies and products by regularly filing patents, thereby avoiding the risk of technology loss and plagiarism by competitors.

Siemens can manage risks related to technology and innovation, market and competition, finance and legal matters in order to hedge risks and maintain its competitiveness.

5. Summary

5.1. Key Findings, Conclusions and Recommendations for Action

This seminar paper takes a closer look at business models using Siemens as an example, focusing on the types of business models and the associated risks, as well as risk management for the successful implementation of the business model. After reviewing the entire paper, we can draw the following conclusions:

Siemens can apply strategies for managing technology and innovation risks, market and competition risks, financial risks and legal risks in its business model in order to achieve sustainable growth.

5.2. Limitations Research Opportunities

This seminar paper is subject to considerable time constraints. This seminar paper focuses on the analysis of the Siemens business model. All analyses and forecasts are based on current and past data, and there is no guarantee as to what will change in the future.

5.3. Future Research Opportunities

Given the limited shelf life of data, how should Siemens respond to subsequent technological developments, productivity advances and changing human needs in order to develop a new business model that ensures the popularity of its products and the continued profitability of the company?

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