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Research on marketing strategy of the semiconductor Company C

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Abstract

The semiconductor industry, despite being a major contributor to technological innovation, poses formidable challenges for small and micro enterprises due to intense competition, high barriers to entry, and rapid innovation cycles. Using C company as a case study, this dissertation aims to develop effective marketing strategies.

The research utilizes a mixed methods approach encompassing qualitative market analysis, customer interviews, questionnaire surveys, and quantitative data analysis. The market analysis provides insights into C company's overdependence on dealers for distribution, lack of innovation, and need for greater customer engagement. Interviews highlight end-user demand for more innovative products and direct engagement with company representatives.

Key findings from a questionnaire survey of 60 customers indicate the paramount importance of timely delivery, high product quality, and excellent after-sales service in customer choice of semiconductor suppliers. However, it also reveals volatility in customer loyalty.

Based on SWOT analysis and Porter's Competitive Strategy Theory, the study recommends product differentiation, customer relationship building, strategic partnerships, and robust supply chain management as key strategies.

Analysis of C company's marketing situation in the semiconductor industry shows it has carved a market position by relying heavily on dealers but lacks direct customer engagement, distancing itself from customer needs and loyalty. Customers perceive its products as lacking innovation compared to competitors, threatening differentiation and long-term sustainability. While regarded as offering reliable, quality products, C company's customer base is mostly dealers, and broadening direct customer reach could improve market performance. C company is seen as responsive to market changes but needs stronger commitment to innovation and customer relationships to remain competitive. Customers desire more innovative products and accessibility to company representatives, requiring better integration of feedback. Market segmentation reveals a customer segment seeking innovative, high-quality products and direct manufacturer engagement that could be beneficial to target. Diversifying sales channels beyond dealers could potentially

improve C company's financial performance.

While providing actionable recommendations, the study acknowledges limitations such as the single case study design and self-reported data. Further research involving multiple cases, interviews, and the supplier perspective could enrich these findings. Nonetheless, this dissertation signifies a vital step towards bridging the theory-practice gap regarding marketing strategies for small and micro enterprises in the high-technology semiconductor industry.

Keywords: small and micro enterprises, semiconductor industry, marketing strategies, market evaluation, customer dialogues, sustainability in manufacturing.

Resumo

A indústria de semicondutores, apesar de ser um grande contribuinte para a inovação tecnológica, apresenta desafios formidáveis para pequenas e microempresas devido à intensa concorrência, altas barreiras à entrada e ciclos de inovação rápidos. Utilizando a empresa C como estudo de caso, esta dissertação tem como objetivo desenvolver estratégias de marketing eficazes.

A pesquisa utiliza uma abordagem de métodos mistos que engloba análise qualitativa de mercado, entrevistas com clientes, questionários e análise quantitativa de dados. A análise de mercado fornece insights sobre a dependência excessiva da empresa C dos revendedores para distribuição, a falta de inovação e a necessidade de maior envolvimento do cliente. As entrevistas destacam a demanda do usuário final por produtos mais inovadores e o envolvimento direto com os representantes da empresa.

As principais descobertas de uma pesquisa com 60 clientes indicam a importância primordial da entrega em tempo hábil, da alta qualidade do produto e do excelente serviço pós-venda na escolha dos fornecedores de semicondutores. No entanto, também revela volatilidade na fidelização de clientes.

Com base na análise SWOT e na Teoria da Estratégia Competitiva de Porter, o estudo recomenda a diferenciação de produtos, a construção de relacionamento com o cliente, parcerias estratégicas e gestão robusta da cadeia de suprimentos como estratégias-chave.

A análise da situação de marketing da empresa C na indústria de semicondutores mostra que ela conquistou uma posição de mercado ao depender fortemente dos revendedores, mas carece de engajamento direto do cliente, distanciando-se das necessidades e lealdade do cliente. Os clientes percebem seus produtos como carentes de inovação em comparação com os concorrentes, ameaçando a diferenciação e a sustentabilidade a longo prazo. Embora seja considerada como oferecendo produtos confiáveis e de qualidade, a base de clientes da empresa C é majoritariamente de revendedores, e ampliar o alcance direto dos clientes pode melhorar o desempenho do mercado. A empresa C é vista como responsiva às mudanças do mercado, mas precisa de um compromisso mais forte com a inovação e o relacionamento com o cliente para se manter competitiva. Os clientes desejam produtos mais inovadores e acessibilidade aos

representantes da empresa, exigindo melhor integração dos feedbacks. A segmentação de mercado revela um segmento de clientes que busca produtos inovadores e de alta qualidade e engajamento direto do fabricante que pode ser benéfico para o alvo. Diversificar os canais de vendas para além dos revendedores poderia potencialmente melhorar o desempenho financeiro da empresa C.

Embora forneça recomendações acionáveis, o estudo reconhece limitações como o desenho de estudo de caso único e dados autorrelatados. Novas pesquisas envolvendo casos múltiplos, entrevistas e a perspectiva do fornecedor poderiam enriquecer esses achados. No entanto, esta dissertação significa um passo vital para preencher a lacuna teoria-prática no que diz respeito às estratégias de marketing para pequenas e microempresas da indústria de semicondutores de alta tecnologia.

Palavras-chave: micro e pequenas empresas, indústria de semicondutores, estratégias de marketing, avaliação de mercado, diálogos com clientes, sustentabilidade na manufatura.

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1.Introduction

1.1 Background of the semiconductor industry in small and micro enterprises.

C company is grappling with several hurdles, such as a deficit in product innovation and the necessity to widen its customer reach beyond the sole dependence on dealers for its sales. The research undertaking will strive to pinpoint the strengths and prospects of C company and suggest apt marketing methodologies for its evolution, offering direction for the growth strategies of analogous SMEs.

The research technique for this venture will encompass qualitative and quantitative assessments, including customer dialogues, market evaluations, and market prognostication. The project will lean on theoretical structures for dissecting marketing methodologies in the semiconductor sector, along with case studies of triumphant marketing approaches.

1.2 The research problem and objectives

The research issue at hand for this project is the prevailing marketing predicament of C company, a small and micro entity in the semiconductor sector. The company confronts multiple difficulties, such as an innovation shortfall in its products and the imperative to broaden its customer demographic beyond the exclusive dependence on dealers for its sales. This investigative undertaking strives to recognize the merits and prospects of C company and suggests appropriate marketing tactics for its advancement, thereby providing direction for the growth strategies of other small and micro businesses in the semiconductor industry (Macher et al., 2002).

The objective of this research project is to conduct a comprehensive analysis of C company's marketing environment and develop marketing strategies that meet the market demand. Specifically, the project aims to identify the following:

- The current marketing situation of C company in the semiconductor industry
- The challenges faced by C company in the semiconductor industry

- The advantages and opportunities of C company in the semiconductor industry
- Marketing strategies suitable for C company's development

The research approach for this endeavor will incorporate both qualitative and quantitative examinations, encompassing customer dialogues, market evaluations, and market prognostications. The project will leverage theoretical models for scrutinizing marketing methodologies within the semiconductor sector, in addition to case studies of triumphant marketing strategies.

1.3 Research questions and hypotheses

The research questions for this project are:

1. What is the current marketing situation of C company in the semiconductor industry?
2. What are the challenges faced by C company in the semiconductor industry?
3. What are the advantages and opportunities of C company in the semiconductor industry?
4. What marketing strategies are suitable for the development of C company?

1.4 Research methodology and data collection

The research methodology for this project involves both qualitative and quantitative analysis. The project will start with customer interviews to identify the needs and preferences of the top 10 enterprises in semiconductor manufacturing. The interviewees will mainly include plant and equipment management groups, such as technical directors and senior technical managers. The interviews will provide insights into the current situation of the semiconductor industry and the challenges faced by C company.

After identifying customer needs, the research project will conduct a market analysis of the semiconductor industry using theoretical frameworks for analyzing marketing strategies. This analysis will involve PEST analysis, SWOT analysis, and other methods to identify the current marketing situation and challenges faced by C company in the semiconductor industry. The market analysis will provide a basis for the development of marketing strategies suitable

for the development of C company.

In addition to qualitative analysis, this research project will also include a quantitative component in the form of a questionnaire survey. The survey will be conducted among semiconductor product users to identify their product preferences and purchasing behavior. The survey will be designed to elicit information on customer needs and preferences, product features and pricing, and vendor services.

The information gathered from customer dialogues and the questionnaire study will be examined using suitable statistical methodologies. The scrutiny will incorporate descriptive statistics, factor analysis, and regression analysis, among other techniques. The outcomes of the analysis will offer perspectives on the connection between customer requirements and preferences, product attributes and cost, as well as provider services.

To ensure the reliability and validity of the data collected, the research project will use a variety of methods to increase the credibility of the research findings. These methods will include triangulation, member checking, and peer debriefing. Triangulation involves using multiple sources of data to verify the research findings. Member checking involves sharing the research findings with the research participants to ensure that they are accurate and reflective of their experiences. Peer debriefing involves having other researchers review the research findings to ensure that they are credible and trustworthy.

The investigative endeavor will leverage a plethora of theoretical structures to guide the data compilation and analysis. These models will encompass market segmentation, product differentiation, and cost leadership, among others. The project will also glean insights from case studies of triumphant marketing methodologies in the semiconductor industry to aid in the formation of marketing strategies apt for the evolution of C company.

1.5 Significance of the study

The significance of this investigation is entrenched in its contributions towards the formulation of marketing methodologies for small and micro businesses in the semiconductor sector. Given that the semiconductor industry is highly technologically advanced, it poses

considerable entry barriers, making it challenging for smaller entities to rival larger, established organizations. Micro and small firms, akin to C company, confront hurdles regarding product innovation, market segmentation, product differentiation, and cost leadership, among others.

The results of this investigation will aid in the development of marketing tactics suitable for the growth of semiconductor industry. By identifying the challenges that C company encounters and suggesting marketing strategies tailored to its needs and market climate, this study will offer guidance for other similar enterprises in the semiconductor industry.

Additionally, this investigation will enrich the theoretical comprehension of marketing strategies within the semiconductor sector. Leveraging theoretical models such as market segmentation, product differentiation, and cost leadership, this study will shed light on the factors that contribute to the success of marketing strategies in the semiconductor industry. The study's findings will contribute to building a knowledge repository on marketing strategies in the semiconductor sector, useful to scholars, researchers, and industry practitioners.

The study will also aid in the advancement of the semiconductor industry within China. As the world's third-largest participant in the semiconductor industry, China has a considerable stake in the growth of this sector. By pinpointing the challenges faced by small and micro businesses in the semiconductor industry and suggesting suitable marketing tactics for their development, this study will bolster the evolution of China's semiconductor industry (Grimes & Du, 2020).

Lastly, this investigation will contribute to the overall economic growth. The semiconductor industry plays a pivotal role in a nation's or region's economy. By fostering the development of small and micro enterprises in the semiconductor sector, this study will contribute to the overall economic expansion.

2. Literature Review

2.1 Overview of the semiconductor industry and market trends

The semiconductor sector is an integral part of the world's economic fabric, supplying

the technological underpinnings for an array of devices and systems which span the spectrum from mobile devices and computing machinery to vehicles, healthcare technology, and industrial gear. The key products of this industry, semiconductor chips, function as the "neural center" for electronic devices, facilitating data processing and sophisticated task execution.

In recent years, the semiconductor sector has experienced a rapid expansion, spurred on by an escalating demand for high-tech commodities and services. As stated in a study by Grand View Research (2021), the global market for semiconductors, valued at USD 513.8 billion in 2019, is projected to expand at a compound annual growth rate (CAGR) of 5.3% from 2020 to 2025. The fastest-growing region is projected to be the Asia Pacific, fuelled by the burgeoning electronics sector in nations such as China, Japan, and South Korea.

Hallmarks of the semiconductor industry include intense levels of innovation, swift technological evolution, and considerable entry barriers. A multifaceted supply chain pervades this industry, with a myriad of firms contributing to the production of diverse components such as wafer fabrication, assembly, testing, and design. The sector is also marked by fierce competition, with massive multinational corporations like Intel, Samsung, and TSMC commanding the market.

A prevailing trend within the semiconductor sector is the escalating utilization of artificial intelligence (AI) and machine learning (ML) technologies within the design and fabrication of semiconductor chips. Such technologies allow for a more rapid and precise data analysis, a vital component in the design and enhancement of semiconductor chips. AI and ML are also employed in the quality assurance and testing of semiconductor chips, bolstering the chips' performance and reliability (Vermesan, 2022).

Another trend emerging within the semiconductor industry is a shift towards differentiation and specialization. As the industry matures, firms are zoning in on the development of specialized products and services aimed at distinct market segments. This has given rise to a new generation of industry players, such as fabless semiconductor firms, who design and sell semiconductor chips but delegate their manufacturing to third-party foundries. These fabless semiconductor firms have surged in popularity, thanks to their ability to concentrate on design and marketing while leaving manufacturing in the hands of those

with specialized skill in wafer fabrication (Park et al., 2018).

The sector specializing in treating exhaust gases produced during semiconductor fabrication is an indispensable segment of the chip manufacturing process. Throughout the creation of semiconductor chips, various harmful gases are emitted that require processing before being discharged into the environment. This gas treatment process is paramount for ensuring the safety of the workforce and adherence to environmental regulations.

This exhaust gas treatment equipment industry specific to semiconductors has seen substantial growth of late, spurred by the escalating demand for semiconductors coupled with the requirement for safer and more eco-friendly manufacturing methodologies. As per a study by Research and Markets (2020), the worldwide market for this specialized exhaust gas treatment equipment is projected to witness a compound annual growth rate (CAGR) of 6.72% spanning the period from 2020 to 2025. The Asia Pacific region is projected to emerge as the primary market for this equipment, primarily due to the flourishing semiconductor sector in nations like China, Japan, and South Korea.

A prevailing trend in this industry centered around semiconductor exhaust gas treatment equipment is the growing adoption of innovative technologies such as plasma treatment and wet scrubbers. Plasma treatment employs high-energy plasma for dealing with harmful gases, while wet scrubbers leverage water or other liquids to cleanse the exhaust stream of hazardous gases. These technological solutions prove effective in handling an extensive array of harmful gases and offer a more sustainable alternative to conventional treatment techniques.

Another trend shaping this industry is the heightened emphasis on sustainability and the environmental footprint. The fabrication of semiconductor exhaust gas treatment equipment demands substantial energy input and yields significant amounts of waste and emissions. Consequently, firms within this industry are increasingly gravitating towards sustainable manufacturing practices and actively working towards minimizing their environmental impact.

Sure, apart from the trends identified earlier, there are other elements fueling the growth trajectory of the semiconductor exhaust gas treatment equipment industry. For instance, the expanding utilization of Internet of Things (IoT) gadgets and artificial intelligence (AI) methodologies is sparking a need for increasingly powerful and cutting-edge semiconductors.

This consequent rise in demand is spurring the need for semiconductor exhaust gas treatment equipment, due to the heightened generation of hazardous gases during the production phase.

Another element propelling the growth of the semiconductor exhaust gas treatment equipment industry is the uptick in the usage of renewable energy sources. The construction of semiconductor exhaust gas treatment equipment demands substantial energy input, and leveraging renewable energy resources can aid in mitigating the environmental footprint of the industry. Numerous firms in the industry are diverting investments into renewable energy resources such as solar and wind power, and are also deploying more energy-efficient production methodologies to cut down their energy consumption.

One of the hurdles faced by the semiconductor exhaust gas treatment equipment industry is the escalating complexity of semiconductor production procedures. As the size of semiconductor chips shrinks and their complexity elevates, the hazardous gases discharged during the production phase are becoming more challenging to treat. For instance, the fabrication of 7nm chips results in the emission of more hazardous gases compared to the creation of 14nm chips. This has led to the requirement for more sophisticated treatment technologies, like plasma treatment and wet scrubbers.

Plasma treatment is a technique that employs high-energy plasma for handling hazardous gases. It has proven effective in managing a broad spectrum of hazardous gases, including those produced during the creation of advanced semiconductor chips. Plasma treatment systems typically comprise a vacuum chamber, an electrode, and a gas supply. The gas supply channels the hazardous gas into the vacuum chamber, where the electrode ionizes it, converting it into harmless byproducts.

Another technology harnessed within the realm of the semiconductor exhaust gas treatment equipment industry is the utilization of wet scrubbers. These machines employ water or alternate liquids to wash away harmful gases from the exhaust stream. Wet scrubbers exhibit effectiveness in managing a broad range of hazardous gases, including those produced during the creation of advanced semiconductor chips. Moreover, they are more environmentally friendly than conventional treatment techniques, as they leverage water rather than chemicals to wash the hazardous gases (Mullen & Morris, 2021).

Another hurdle that the semiconductor exhaust gas treatment equipment industry grapples with is the rising manufacturing costs. The fabrication of semiconductor exhaust gas treatment equipment is a complex procedure that demands substantial investment in research and development. Consequently, the manufacturing costs can be steep, posing a challenge for small and micro enterprises seeking to contend in the industry (Shen et al., 2018).

To tackle this obstacle, firms in the industry are pivoting towards innovative business models, such as providing equipment as a service or leasing equipment to their clientele. This facilitates clients in availing of cutting-edge technology without the burden of a substantial upfront investment in equipment. Simultaneously, it enables companies to garner recurring revenue through service contracts or leasing fees.

The semiconductor industry is also confronting novel challenges associated with sustainability and environmental ramifications. The fabrication of semiconductor chips demands vast amounts of energy and water, besides generating considerable waste and emissions. Consequently, firms in the semiconductor industry are honing their focus on sustainable manufacturing methodologies and minimizing their environmental impact. For instance, semiconductor firms are investigating new materials and processes that curtail the usage of hazardous chemicals and waste production (Freeman, 2021).

The semiconductor domain is also significantly influenced by international economic and geopolitical elements. For instance, the continuing trade frictions between the United States and China have exerted an impact on the semiconductor sector, with tariffs and limitations on technology exchanges affecting the worldwide supply network. In a similar vein, the COVID-19 pandemic has disturbed global supply chains and influenced demand for semiconductor chips, instigating scarcities in certain segments (Gaines-Ross, 2020).

The industry of semiconductor exhaust gas treatment equipment grapples with novel obstacles linked to the escalating intricacy of semiconductor manufacturing operations. As semiconductor chips become tinier and more elaborate, the harmful gases produced during the manufacturing process are becoming tougher to manage. Consequently, corporations in the sector are pouring investment into research and development to innovate new and more efficient treatment methodologies.

2.2 Marketing strategies for small and micro enterprises in the semiconductor industry

The semiconductor sector is a fiercely competitive and swiftly moving market, generating numerous obstacles for companies. For these companies to triumph in this sector, it's imperative that they possess efficient marketing tactics capable of enabling them to distinguish themselves from competitors and engage their intended consumers (Kotler and Keller, 2016). This literature examination will delve into a number of marketing techniques that have proven effective for companies within the semiconductor industry.

One successful marketing approach for these smaller enterprises in the semiconductor field involves focusing on niche markets. These niche markets are specialized segments with distinct needs and tastes, and they can be an attractive target for smaller firms lacking the resources to compete with larger entities in the wider market. By centering on a specific niche, these companies can customize their products and services to cater to the unique needs of their customers, thus differentiating themselves from competition (Porter, 1998, pp.34–46).

Furthermore, these small and micro firms in the semiconductor sector can utilize social media and digital marketing to connect with their intended consumers. Platforms like LinkedIn and Twitter can be harnessed to establish a potent online presence and interact with consumers and industry specialists. Digital marketing techniques like search engine optimization (SEO), email marketing, and content marketing can also be potent in reaching intended consumers and fostering brand recognition (OECD, 2000).

Nonetheless, it is crucial to acknowledge the challenges associated with digital marketing. For instance, the semiconductor sector is highly technical, and communicating intricate technical data to a non-technical audience can be tough. Additionally, employing social media and digital marketing can be demanding in terms of time and necessitates a considerable investment in resources.

In the semiconductor sector, it is vital for petite and miniature businesses to establish robust relationships with their industry peers. This collaboration facilitates resource sharing,

joint research, and mutual marketing of goods and services. This alliance enables them to capitalize on each other's strengths and resources, and compete more fiercely in the market.

An understanding of the target audience and market trends is crucial for these businesses. By undertaking market analysis, these businesses can pinpoint their customer base, understand their desires, and identify industry trends that drive demand. This valuable knowledge is then harnessed to design personalized marketing campaigns and to align their offerings to the specific needs of their clientele (Porter, 1998, pp.34–46).

Additionally, these firms in the semiconductor industry can employ a variety of strategies to enhance their marketing endeavors and augment their market competitiveness.

One significant tactic involves constructing a robust and reputable brand that earns customer recognition and trust. Such a brand can position small-scale and micro semiconductor enterprises uniquely in the market, fostering customer fidelity and establishing a favorable market image. This can be materialized via maintaining brand consistency, delivering superior products and services, and launching impactful marketing efforts that underscore the brand's exceptional value proposition (Gstngr et al., 2021).

Engaging in industry events and conventions is another fruitful venture for these firms. Such gatherings are a valuable avenue for networking with industry mavens and prospective clientele, showcasing their offerings, and gaining insights into the latest market trends and advancements (Hamel & Prahalad, 1994). Participating in these forums enhances market visibility for these enterprises and aids in procuring new business opportunities.

Employing customer testimonials and case studies is another potent strategy. Gathering endorsements from pleased customers and broadcasting their success narratives enables small-scale and micro businesses to earn credibility and foster trust among potential customers. This can be achieved using social media, email marketing, and other platforms that facilitate customers sharing their company experiences (GRANT, 1999).

Lastly, these enterprises can profit by forging alliances with scholarly institutions and research bodies. Collaborating with these entities opens up access to cutting-edge research and development projects, enables tapping into industry expert wisdom, and helps build productive partnerships propelling innovation and growth in the market.

In conclusion, small and micro enterprises in the semiconductor industry face many

challenges, but there are a range of marketing strategies and tactics that can help them to succeed in the market. By investing in R&D, building a strong brand, participating in industry events, leveraging customer testimonials and case studies, and collaborating with academic institutions and research organizations, these enterprises can differentiate themselves from their competitors and reach their target customers more effectively.

2.3 Theoretical frameworks for analyzing marketing strategies

Theoretical frameworks are essential in providing a basis for analyzing and understanding the marketing strategies employed by small and micro enterprises in the semiconductor industry. These frameworks help businesses to develop comprehensive marketing plans that can help them to effectively market their products and services, identify new market opportunities, and differentiate themselves from competitors (Kotler & Armstrong, 2021).

- Marketing Mix (4Ps)

The marketing mix, also known as the 4Ps (product, price, place, and promotion), is a widely used framework for analyzing marketing strategies. The product aspect of the marketing mix focuses on the features, design, and packaging of the product. The price aspect of the marketing mix focuses on the pricing strategy, including pricing tactics and pricing policies. The place aspect of the marketing mix focuses on the distribution channels used to reach customers, including the choice of retail channels and the design of the supply chain (Wernerfelt, 1984). Finally, the promotion aspect of the marketing mix focuses on the communication strategies used to reach customers, including advertising, personal selling, public relations, and sales promotion.

- SWOT Analysis

SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis is another commonly used framework for analyzing marketing strategies. SWOT analysis involves analyzing both the internal and external factors that can impact a company's marketing efforts. Internal factors, such as the company's strengths and weaknesses, can help to identify areas where

the company can improve its marketing efforts. External factors, such as the opportunities and threats in the market, can help the company to identify new market opportunities and potential risks that may impact its marketing strategy.

- Porter's Five Forces

Porter's Five Forces is a framework that helps to analyze the competitive dynamics of an industry. The framework suggests that there are five key forces that can impact the competitive intensity of an industry: the bargaining power of suppliers, the bargaining power of buyers, the threat of new entrants, the threat of substitute products, and the intensity of competitive rivalry. By analyzing these forces, companies can develop a marketing strategy that takes into account the competitive landscape of the industry and identifies ways to differentiate themselves from their competitors.

Figure 1: Porter's Five Forces

(Porter, 2008)

- Value Chain Analysis

Value chain analysis is a framework that helps to identify the key activities involved in delivering a product or service to customers. By analyzing each of these activities, companies can identify areas where they can add value and differentiate themselves from their competitors. The framework involves analyzing the primary activities (such as production, marketing, and customer service) and support activities (such as procurement, technology

development, and human resources) that are involved in delivering the product or service to customers (Hoopes & Madsen, 2022).

- Resource-Based View (RBV)

The resource-based view (RBV) is a theoretical framework that suggests that a company's resources and capabilities are the key determinants of its success in the market. RBV focuses on the internal resources and capabilities of a company and suggests that these resources can be leveraged to create a sustainable competitive advantage (Barney, 1991). By analyzing the company's internal resources, such as its technological capabilities, brand equity, and human capital, companies can develop a marketing strategy that takes into account its unique strengths and weaknesses.

2.4 Case studies of successful marketing strategies in the semiconductor industry

In the fast-paced, fiercely competitive semiconductor industry, corporations are constantly innovating and seeking unique ways to stand out from their rivals and secure a larger market portion. Astute marketing tactics are key to achieving these objectives, as demonstrated by numerous successful instances in the field (Treacy & Wiersema, 1993).

Intel's "Intel Inside" campaign is a famed instance of triumphant marketing in the semiconductor sector. Initiated in the early 90s, the campaign's objective was to heighten the recognition of the Intel brand and accentuate the usage of their microprocessors in several prevalent computer brands. The campaign resulted in a roaring success and firmly positioned Intel as a dominant player in the semiconductor domain (E. Moon & L. Darwall, 2022).

Analog Devices' "customer intimacy" methodology is another successful marketing approach in the semiconductor sector. This strategy is centered on cultivating deep ties with customers and offering tailor-made solutions to cater to their unique needs. By emphasizing customer intimacy, Analog Devices managed to distinguish itself from its competitors and amass a dedicated customer following (Treacy & Wiersema, 1993).

Texas Instruments' emphasis on ingenuity and product innovation has enabled the firm to stay ahead of its rivals. With significant investment in research and development, and a

consistent record of launching groundbreaking new products, Texas Instruments has managed to retain its competitive advantage and remain significant in a rapidly changing industry (Texas Instruments, 2021).

Additional exemplars of fruitful marketing strategies in the semiconductor sector comprise Samsung's commitment to vertical integration—controlling each stage of production to assure product quality (Kim and Kim, 2018)—and NVIDIA's product differentiation strategy, which enabled the firm to establish a distinct position in the gaming and graphics market (Michell, 2010).

These case studies emphasize the importance of crafting effective marketing strategies in the semiconductor industry and showcase key tactics that companies can employ to set themselves apart from rivals. The first tactic is brand building, which entails fostering a powerful brand persona and leveraging it to amplify the visibility of the company's offerings. The second tactic is customer intimacy, a method focused on building deep relationships with customers and customizing offerings to satisfy their specific needs. The third tactic is innovation, which is the heavy investment in research and development for launching groundbreaking products. The fourth tactic is vertical integration, which involves the control over the entire production process to ensure high-grade products. Lastly, the fifth tactic is product differentiation, which involves formulating unique products or features that distinguish the company from competitors.

Besides these case studies, there is an expanding volume of academic works discussing semiconductor industry marketing strategies. For instance, a study by Chew et al. (2007) concluded that businesses prioritizing product differentiation, innovation, and customer orientation tend to outperform others. Another study by Tseng et al. (2019) found that firms adopting a proactive market stance often succeed more than those adopting a reactive or passive market orientation.

Focusing on these varied facets of the marketing mix allows semiconductor firms to differentiate themselves from rivals and attain enduring competitive edge. Yet, crafting successful marketing strategies is a complex, continuous process, requiring companies to be ready to adapt and modify their strategies in line with fluctuating market conditions and evolving customer needs.

3.Methodology

3.1 Research design and approach

3.1.1 Research Design and Methodology

The research design of this study hinges on the use of a questionnaire to amass data. A questionnaire, a tool used for surveys, includes a variety of queries devised to extract information regarding participants' experiences, viewpoints, opinions, and behaviors (Dillman et al., 2014). This tool is highly advantageous for research studies aiming to gather quantitative data from a broad spectrum of participants (Creswell, 2014).

The focal group of this study involves major semiconductor firms and businesses within the semiconductor supply chain purchasing precision marketing products. The sampling technique applied for this study is purposive sampling, where participants are chosen owing to their relevance to the research objectives (Creswell, 2014). The principle of representativeness will dictate the sample size of this study, ensuring the sample is ample to adequately represent the target demographic (Dillman et al., 2014)

The questionnaire will be administered digitally via a survey tool, with participants receiving an email invitation to partake in the survey. The questionnaire's design will focus on collecting data concerning the participants' experiences, attitudes, and viewpoints regarding precision marketing, and the purchasing behavior of semiconductor companies. The questionnaire will encompass multiple-choice, rating, and open-ended questions, with the answers being subjected to quantitative analysis.

The data gathered via the questionnaire will undergo analysis using descriptive and inferential statistics. Descriptive statistics will be employed to present a summary of the questionnaire responses, while inferential statistics will be used to evaluate hypotheses and discern the significance of the relationships among variables (Creswell, 2014).

3.1.2 The specific research method

This study adopts a qualitative research methodology that seeks to unearth and comprehend the distinct experiences, viewpoints, and behaviors of individuals entrenched in the semiconductor industry. Recognized for its rich descriptive and context-aware nature, qualitative research is best suited for in-depth exploration of multifaceted social phenomena like market strategies, customer conduct, and industry-specific subtleties. It provides an understanding of human engagement within these intricacies, aiming to decode and illuminate the reasons and motives behind individual actions, a feature broadly acknowledged in scholarly circles (Creswell, 2014; Silverman, 2016).

The chief instrument for data collection in this investigation will be a survey questionnaire, designed to encompass a mix of open-ended and closed-ended inquiries. The open-ended queries are designed to afford participants the latitude to offer detailed, nuanced responses in their language, thereby acknowledging their unique experiences and perspectives. These will be especially beneficial for acquiring comprehensive insights into the motivations, attitudes, and deep-seated emotions of the participants (Bryman, 2016).

On the other hand, the closed-ended questions are incorporated to provide a level of standardization and comparability in responses, permitting the investigator to quantify specific aspects of the replies, aiding in discerning patterns, and enabling a more precise and impartial analysis (Fowler, 2013). The questionnaire survey will be distributed to consumers of semiconductor products to ascertain their product predilections, buying habits, and impressions of supplier services.

Once accumulated, the data from the questionnaire survey will undergo a rigorous qualitative data analysis procedure. This analysis principally involves a meticulous and systematic examination of the data to pinpoint patterns, themes, and categories that surface, thereby amplifying the investigator's comprehension of the research problem and enabling the creation of fresh insights (Creswell, 2014). Given the often voluminous and intricate nature of qualitative data, software tools like SPSS will be employed to aid this process. SPSS is acknowledged for its capacity to assist in structuring, encoding, and categorizing the data into specific themes and sub-themes, a process that substantiates the methodological

rigor of thematic analysis (Braun & Clarke, 2013).

Thus, through the execution of qualitative research methodologies, this study aspires to uncover rich, comprehensive insights into the dynamics of the semiconductor industry, enriching both academic and practical understanding in the domain.

3.1.3 The rationale for selecting this approach

The choice to implement a qualitative methodology in this study is founded on its suitability for unpacking the complexity of social phenomena such as marketing strategies and consumer behavior, both of which are subjective in nature and contextually bound (Creswell, 2014; Denzin & Lincoln, 2017). By engaging with a qualitative paradigm, the research can yield a comprehensive understanding of the issue at hand, harnessing rich, nuanced, and detailed data that can serve to shed light on the research problem (Bryman, 2016).

Furthermore, qualitative research, with its exploratory nature, is particularly effective in scenarios where the research problem is not fully defined or understood (Creswell, 2014). The open-ended nature of qualitative data collection allows for the generation of fresh insights, ultimately contributing to a more profound understanding of the problem (Silverman, 2016). In the context of this study, the aim is to discern the challenges faced by small and micro enterprises in the semiconductor industry and to develop effective marketing strategies to facilitate their growth. Thus, adopting a qualitative methodology is highly apt, as it can provide in-depth insights and perspectives, unraveling the complexities of the obstacles and opportunities that these enterprises encounter within the semiconductor industry.

Qualitative research also offers the researcher an opportunity to delve into the personal experiences, perceptions, and behaviors of individuals. This provides a comprehensive and in-depth understanding of the research issue, effectively capturing the subjective reality of the participants (Braun & Clarke, 2013; Patton, 2015). For instance, in this study, a questionnaire survey will be employed to engage with semiconductor product users. This allows for an exploration into their lived experiences and perceptions regarding marketing

strategies within the semiconductor industry, further enhancing the understanding of the problem.

In addition to providing rich insights, qualitative research also allows for a more empathetic understanding of the research issue. It places emphasis on viewing the issue from the perspective of the participants, thereby capturing their beliefs, attitudes, experiences, and emotions (Flick, 2014). This human-centric approach is integral to the research's goal, enabling the study to account for the complexities of human behavior and decision-making processes within the semiconductor industry.

In sum, qualitative research, with its focus on depth, context, and interpretation, aligns well with the research objectives. It can help unearth the intricate dynamics of marketing strategies and consumer behavior in the semiconductor industry, providing valuable insights that can inform effective strategies for small and micro enterprises within this field.

3.1.4 The research questions and objectives

The research questions and objectives for this study are fundamentally focused on understanding the decision-making mechanisms utilized by organizations within the semiconductor industry when sourcing products from suppliers. The purpose-built questionnaire is designed to elicit data on a range of influential factors, such as product quality, price, delivery speed, after-sales service, brand reputation, and supplier interactions.

These research questions and objectives align closely with the overarching aim of the study, which is to unearth opportunities for small and micro enterprises within the semiconductor industry to boost sales while reducing production costs. By demystifying the decision-making processes within industry companies, the study aims to furnish insights into potentially effective marketing strategies that small and micro enterprises could deploy to compete against their larger counterparts.

This research design and methodology, grounded in a qualitative approach and utilizing a questionnaire as the primary data collection tool, intends to capture in-depth data from a unique cohort of semiconductor industry companies. The adoption of qualitative methods

engenders a more comprehensive understanding of the decision-making processes and the factors that influence the procurement decisions of these companies (Creswell, 2014; Patton, 2015).

The questionnaire has been carefully crafted to include a combination of multiple-choice and open-ended questions to accommodate a broad spectrum of responses, fostering rich insights into the decision-making behaviors of the target group. This methodology aligns harmoniously with the qualitative research approach, which underscores the importance of eliciting detailed and complex data from respondents (Miles, Huberman, & Saldaña, 2014).

By allowing respondents to express their perspectives in their own words, open-ended questions can capture subtle nuances and complexities that may otherwise be overlooked in more structured data collection methods (Bryman, 2016). On the other hand, multiple-choice questions can provide valuable quantitative data that can be used to discern trends and patterns among respondents (Fowler, 2013).

Further, the implementation of a qualitative methodology brings a level of flexibility that allows for the exploration of unexpected topics and themes that may emerge during data collection, thereby enhancing the depth and breadth of the data collected (Tracy, 2020).

In conclusion, the qualitative research approach and the use of a mixed-method questionnaire in this study aim to provide an in-depth, nuanced understanding of the decision-making processes and influencing factors within the semiconductor industry. By doing so, the study aims to uncover valuable insights and strategies that small and micro enterprises in this industry can adopt to enhance their competitiveness and growth.

3.1.5 The role of the researcher in the study

The role of the researcher in this study is undeniably crucial, especially given the qualitative research framework where the researcher is intricately involved in the data collection and analysis process. This participation extends beyond the mechanics of data collection, encompassing the creation of an environment that facilitates the sincere exchange of thoughts and experiences from participants. The researcher's role as a conduit for the

extraction of rich, nuanced information from the participants necessitates fostering trust and rapport.

As the primary instrument for data collection and analysis, the researcher is responsible for executing the interviews, transcribing the gathered information, dissecting the data, and interpreting the findings. Ensuring the authenticity and validity of the responses and interpretations requires the researcher to consciously circumvent bias that could sway the research findings. This need to minimize bias extends to both influencing the participants' responses and the researcher's interpretation of the data.

One method for mitigating bias is to adopt a reflexive approach, which involves the researcher's continuous introspection of their own potential biases, prior experiences, and preconceived notions that could inadvertently color the research process and subsequent results (Berger, 2015). This reflexive approach encourages the researcher to constantly question their own perspectives and assumptions, thereby promoting a more balanced and objective understanding of the data (Guillemin & Gillam, 2004).

Moreover, the researcher is tasked with upholding objectivity in the research process, which will be facilitated by employing multiple sources of evidence and triangulating the data. This ensures the validity and reliability of the research findings and bolsters the study's robustness (Denzin, 2012). The use of multiple data sources allows for the cross-verification of findings, thereby enhancing the credibility and trustworthiness of the research.

To further support this objectivity, the researcher will also undertake a critical approach to data analysis. This involves interrogating assumptions, identifying and acknowledging underlying power dynamics, and recognizing potential influences that might affect the data. The researcher must be cognizant of power relations and hierarchical dynamics that could potentially affect participants' responses, thereby ensuring a fair representation of participants' experiences and perspectives (Lather, 2007).

In summary, the researcher's role in this investigation goes beyond merely gathering and analyzing data. They are instrumental in creating a safe and trusting environment that enables participants to express their experiences and perceptions candidly. The insights garnered from the investigation aim to provide a comprehensive understanding of the challenges faced by small and micro-enterprises in the semiconductor industry. By

meticulously adhering to these responsibilities, the researcher can contribute significantly to the discourse on effective marketing strategies for these businesses.

3.1.6 The ethical considerations of the study

Ethical considerations undoubtedly serve as the cornerstone of any scholarly inquiry, carrying paramount importance throughout the research journey. This investigation is no different and is committed to maintaining stringent ethical standards throughout, especially prioritizing the preservation of participants' rights and confidentiality. These ethical principles transcend mere regulatory compliance, shaping the overall integrity and reliability of the research process (Mertens & Ginsberg, 2008).

An essential aspect of ethical research practices is obtaining informed consent from participants. Informed consent ensures participants' full comprehension of the research process they are entering, the expected benefits, potential risks, and their rights as participants (United States. National Commission For The Protection Of Human Subjects Of Biomedical And Behavioral Research, 1978). Prior to any data collection, participants will be provided with an informed consent form outlining the study's purpose, the data collection procedures, how their responses will be used, and the protections in place for their data. The researcher will ensure participants understand the voluntary nature of their participation, the confidentiality of their responses, and their freedom to withdraw from the study at any time without penalty.

Maintaining participant confidentiality is another integral ethical consideration in this research. To this end, measures will be taken to protect participants' identities and the information they provide. Any identifying details will be omitted or anonymized, and all data will be securely stored, accessible only to the researcher. The strict handling of data ensures protection against unauthorized access and safeguards participant privacy (Flick, 2014).

Equally important is the commitment to protect participants from any harm or distress throughout the research process. The researcher will ensure that all interactions with participants are respectful and sensitive, reducing any potential for discomfort or harm. This

principle extends to considering the potential impact of the research findings on the participants and their communities (Resnik, 2015).

Furthermore, ethical guidelines extend to the dissemination of research findings. The researcher will be committed to accurately and objectively presenting the research outcomes, ensuring that participant confidentiality remains intact during the reporting process. Potential conflicts of interest that may arise during the research process will be disclosed transparently, and any issues will be appropriately addressed (American Psychological Association, 2017).

These ethical considerations are guided by established principles and guidelines, such as the Belmont Report and the Code of Ethics of the American Psychological Association (APA). Adherence to these guidelines is instrumental in maintaining the integrity and validity of the research while ensuring respect for participant rights and welfare. By upholding these ethical considerations, this study not only ensures regulatory compliance but also contributes to promoting and reinforcing the broader ethical culture within the research community.

This careful attention to ethical considerations serves to enhance the credibility of the study's findings. Upholding these ethical principles allows the research to contribute meaningfully to the discourse on small and micro-enterprises in the semiconductor industry, while simultaneously respecting the rights and experiences of all participants.

Adhering to ethical considerations in research is not just a formality but a moral obligation of the researcher, and it fosters trust, respect, and integrity within the research process. Ensuring ethical compliance aligns with the principles of respect for persons, beneficence, and justice as outlined in the Belmont Report (United States. National Commission For The Protection Of Human Subjects Of Biomedical And Behavioral Research, 1978).

In this study, the researcher also understands the importance of reciprocity in research ethics, a principle suggesting that participants should benefit from the research in some way. Thus, the researcher will strive to ensure that participants gain a sense of fulfillment or contribute to a broader understanding of the issue at hand (Boser, 2007).

Ethical considerations also extend to the accuracy and honesty in data analysis and interpretation. It is the researcher's responsibility to represent the data faithfully without manipulation or distortion. The researcher is committed to this obligation, promising a fair and truthful interpretation of the collected data.

Moreover, in line with ethical norms, the researcher recognizes the importance of acknowledging all sources of information used in the study. This study will respect the intellectual property rights of others, ensuring that all references and citations are accurately reported following the Harvard citation style. This also includes the avoidance of plagiarism, a fundamental ethical principle in academic research.

Lastly, it's also important to consider the long-term storage and potential future use of the data collected. The researcher will ensure the data's secure and ethical storage, keeping in mind the potential future research applications. Any future use of the data will comply with the ethical guidelines initially outlined, with particular focus on maintaining participant confidentiality and informed consent (Corti, Day, & Backhouse, 2000).

Ethical considerations, as shown, form the bedrock of this study, guiding every step of the research process. By strictly adhering to these principles, the study ensures not only the validity and credibility of the findings but also contributes to an ethically robust research environment within academia.

3.2 Sampling and Data Collection Methods

3.2.1 The target population for the study

Expanding the scope of this investigation, the research focuses its attention on a distinctive cluster of professionals within the semiconductor industry. These individuals, owing to their influential roles in their respective organizations, significantly contribute to the purchasing decisions within these enterprises. Predominantly, the research population comprises those in executive roles in notable semiconductor firms as well as professionals instrumental in the semiconductor supply chain. The study targets technical directors, senior technical managers, procurement managers, and supply chain managers, among others. The strategic decision-making of these professionals not only directly affects their companies' financial health and market position but also substantially influences the dynamics of the semiconductor industry at large. Given their pivotal role in the industry, their insights and experiences form a critical resource for this research (Guest et al., 2012).

To methodically select participants from this particular group, the study utilizes purposive sampling, a non-random method of selection. This approach allows for the deliberate choice of individuals who meet certain criteria that align with the research questions (Palinkas et al., 2015). The merit of this approach lies in its capacity to ensure that all participants possess the relevant knowledge, experience, and expertise that resonates with the research objectives. It paves the way for collecting data that is rich, detailed, and specifically relevant to the semiconductor industry, thereby enhancing the quality of the insights gathered to address the research problem (Guest et al., 2012; Silverman, 2016).

Upon identifying suitable participants, they will be engaged with a comprehensive questionnaire, meticulously designed to elicit valuable data. This questionnaire will be carefully tailored to resonate with the professional expertise of the participants and to delve into the multifaceted aspects of the research problem. The aim is to uncover nuanced insights into the decision-making processes, and the myriad of influencing factors, in the context of the semiconductor industry. The questionnaire will be distributed through various channels, such as emails and online survey platforms, to maximize participant convenience and response rates. This flexible choice of data gathering method takes into account the preferences and accessibility of the targeted population, thereby enhancing participation and quality of responses (Bryman, 2016; Creswell, 2014).

A research project of this scale necessitates the utmost adherence to ethical considerations. Conforming to the American Psychological Association guidelines (2017), all participants will be duly informed about the purpose of the study, their rights as participants, and the confidentiality measures to safeguard their responses. Emphasizing voluntary participation, the study will ensure that participants can withdraw at any stage without repercussions. By committing to these ethical guidelines, the study not only safeguards the rights and wellbeing of participants but also strengthens the research's credibility, reliability, and validity (Guillemin & Gillam, 2004).

In conclusion, the study employs a well-structured approach to participant selection and data collection, concentrating on key decision-makers within the semiconductor industry. The methodological decisions underline the study's commitment to in-depth investigation, rigorous ethical practice, and the aspiration to generate actionable insights beneficial for

small and micro enterprises in the semiconductor industry.

3.2.2 The sampling strategy

The methodology of this study rests on a key principle: the use of purposive sampling, often termed judgmental sampling. This selection technique is widely recognized for its ability to recruit participants who can offer rich, nuanced, and specialized knowledge germane to the research query (Palinkas et al., 2015). The implementation of purposive sampling in this study pivots on choosing participants based on their professional expertise, their involvement in the semiconductor industry, and specifically, their role in influencing procurement decisions concerning semiconductor products.

The inherent strength of purposive sampling lies in its ability to ensure that the selected participants aptly reflect the characteristics and experiences of the broader population of interest. As a result, their insights and experiences yield a profound understanding of the decision-making process related to semiconductor product procurement within large semiconductor corporations and other entities involved in the semiconductor supply chain.

The identification of these key participants necessitates a multifaceted approach, encompassing various avenues such as professional networks, industry-specific associations, digital directories, and recommendations from experts within the semiconductor industry. These sources enable the research to reach individuals who not only fit the defined selection criteria but can also significantly contribute to the depth and quality of the research data.

A notable aspect to consider in qualitative research like this is the determination of an appropriate sample size. The guiding principle here is the concept of data saturation, which suggests that data collection should continue until no new or additional insights are emerging from the collected data (Guest et al., 2006). This approach ensures that the collected data sufficiently represent the range of experiences and perspectives within the population of interest. For this study, the sample size will be aligned with commonly suggested benchmarks for qualitative research, which suggest approximately 20-30 participants to ensure a rich,

diverse, and comprehensive data collection (Guest et al., 2006; Creswell, 2014).

To further enhance the study's robustness, the research design will ensure that diverse perspectives are gathered by including participants from various roles within the industry and from different geographic locations. Such heterogeneity will add an additional layer of depth to the insights gathered, thereby expanding the study's potential to inform strategies and policies that could be implemented industry-wide.

The research's sampling strategy – employing purposive sampling and pursuing data saturation – is meticulously designed to extract maximum value from the respondents. It seeks to assemble a well-rounded picture of the research problem, drawing from a rich tapestry of experiences and perspectives within the target population. Through this robust sampling approach, the study aims to yield valuable, actionable, and representative insights into the complex decision-making processes governing semiconductor product procurement within the semiconductor industry.

3.2.3 The sample size and criteria for selection

Qualitative research differs significantly from quantitative research, particularly concerning the approach to the sample size. While the latter often calls for large sample sizes to ensure statistical power and generalizability, qualitative research typically involves smaller sample sizes. The crux of qualitative research rests on capturing the depth, richness, and complexity of individual experiences and perceptions, as opposed to seeking broadly generalizable trends. Hence, the focus is not on the number of participants but the quality and depth of the data procured.

In this study, the sample will comprise individuals who hold pivotal roles within major semiconductor firms and those integral to the semiconductor supply chain. The roster of prospective participants includes technical directors, senior technical managers, procurement managers, and supply chain managers. These individuals not only operate in the front lines of the industry but also play a decisive role in procuring semiconductor products for their organizations. Their firsthand insights will constitute the backbone of the data to be

analyzed.

The methodological underpinning of the participant selection process is purposeful sampling, a non-random technique that purposefully picks individuals who meet specific, pre-determined criteria that align with the research objectives (Palinkas et al., 2015). This approach will ensure that the study involves participants who have substantial, direct experience in the research domain.

The criteria for selection will comprise several factors. First, the participant's role within the organization and their involvement in the decision-making process around semiconductor product procurement will be considered. Second, the overall industry experience, depth of their professional knowledge, and their strategic influence within their organization will be taken into account.

Determining the sample size in qualitative research requires careful consideration. This study will use the concept of 'saturation point' as a compass to guide the determination of the sample size. In qualitative research, saturation refers to the point at which no new themes or insights are emerging from the data (Saunders et al., 2016). To identify when this saturation point is reached, an iterative process of data collection and analysis will be undertaken. Throughout this iterative process, the data gathered will be constantly examined for recurring themes, patterns, and novel insights. The data collection will cease when no additional information or insights are forthcoming.

The employment of purposeful sampling, coupled with the saturation point strategy for determining the sample size, is anticipated to offer several benefits. Most importantly, it guarantees that the participants chosen are deeply relevant to the research aims, thereby increasing the potential for obtaining rich, nuanced data that can yield significant insights (Morse, 2015). Additionally, it reduces the risk of including participants who may not be able to contribute significantly to the research question.

3.2.4 The data collection methods

The main mode of data accumulation in this study will be an online self-filled

questionnaire. Owing to their ease, cost-effectiveness, and wide-reaching capabilities within a short span, online surveys have gained traction as a favored research tool (Birnbaum, 2004). Additionally, they nullify the need for paper-based surveys while simplifying data management and analysis (Ball, 2019).

The targeted questionnaire will be dispatched via email to selected professionals associated with large semiconductor firms and entities in the semiconductor supply chain. This email-centric strategy allows for swift, economical data collection while ensuring a representative sample of the targeted population.

To elevate the rate of responses, a host of strategies will be employed, such as initial notification emails, reminders, and set deadlines for responses (Couper, 2000). With a design that is easy to navigate, succinct, and lucid, the questionnaire will feature a combination of multiple-choice and rating-based questions to facilitate responses and ensure dependable data (Bradburn et al., 2004).

3.2.5 The data recording and storage methods

Proper methods for data capture and archiving are central to any research endeavor, impacting the precision and trustworthiness of the collected data. This investigation will adopt stringent and orderly measures for data documentation and preservation to guarantee its ready availability and effective analysis. The responsibility of data documentation will rest with proficient research aides, who will be tasked with recording and transcribing participant responses. To maintain participant confidentiality and privacy, the logged data will be secured in an electronically encrypted form on a safeguarded server.

A tangible copy of the data will be kept as a precautionary backup in a secured location. To further protect participant confidentiality and uphold their privacy, the stored data will be coded and anonymized. Data access will be strictly limited to the research team; any external individual or entity desiring data access will be required to secure permission from the research group.

This study's data documentation and archiving practices align with the ethical principles

of research and conform to data protection regulations. By employing secure electronic storage along with a physical data backup, this study ensures the reliability and accuracy of the data it collects and analyzes.

3.2.6 The steps taken to ensure the quality and reliability of the data

Maintaining the accuracy and dependability of qualitative research data is of paramount importance for the credibility of the findings. In order to secure the high quality and trustworthiness of data for this investigation, multiple measures will be adopted.

Initially, we will conduct a pre-test of the questionnaire on a select sample of participants prior to distributing it among the target audience. This will allow us to gauge the clarity of questions and the suitability of the answer choices. The insights derived from this preliminary round will be instrumental in refining the questionnaire, thereby enhancing its validity and reliability (Morse et al., 2002).

Next, meticulous attention will be given to data acquisition, which will be thoroughly documented and monitored. An accurate recording of all responses is paramount to curtail errors and foster consistency. The possibility of using audio or visual equipment to record feedback is also being considered to bolster the reliability of the data gathered.

In addition, data interpretation will follow a rigorous, methodical procedure. Participant feedback will be coded and grouped to discern recurring themes and patterns. A minimum of two researchers will cross-verify the coding process to fortify the dependability of the codes generated(Gibbs, 2012).

Lastly, we plan to employ member checking to verify our findings. Participants will be offered a chance to assess and corroborate the findings, ensuring they accurately represent their views and experiences. This step strengthens the credibility of the results by involving the respondents in the validation process.

3.3 Data Analysis Techniques

3.3.1 The type of data to be collected

The information gathered via the questionnaire in this investigation primarily comprises qualitative data. This type of data is not quantifiable or analyzable through numerical methods but is typically embodied in the form of words, phrases, or textual data. Responses to the open-ended queries in the questionnaire will generate text-based data, which will be processed using a technique called thematic analysis.

Thematic analysis is a prevalent method for evaluating qualitative data, where data patterns are identified and analyzed to discover themes or recurring meanings. It offers a versatile approach that allows for recognition of both overt and covert meanings within the data. The procedure encompasses a meticulous examination and re-examination of the data, coding it into significant categories, and subsequently identifying emerging themes. These themes are then critically reviewed and fine-tuned until a comprehensive understanding of the data is attained.

Thematic analysis is exceptionally fitting for reviewing data harvested from semi-structured interviews, focus groups, or open-ended questionnaires (Braun & Clarke, 2019). This technique empowers the researcher to pinpoint patterns and themes that may not have been initially envisaged, thereby offering profound and intricate insights into the experiences and viewpoints of the participants.

3.3.2 The steps taken to ensure the rigor and trustworthiness of the data analysis.

In ensuring the robustness and dependability of data examination in qualitative investigation, various measures can be adopted. A pivotal step is securing inter-coder reliability, which involves having multiple independent evaluators scrutinize the data, and compare their outcomes to guarantee consistency and concurrence in coding choices (Miles & A Michael Huberman, 1994). Moreover, implementing member checking, which allows participants to review and provide feedback on the research findings, bolsters the credibility

and authenticity of the study (Lincoln & Guba, 1985).

Another critical phase is engaging in reflexivity, which is a process of recognizing and critically scrutinizing the role of the researcher in influencing the research methodology and conclusions (Charmaz, 2006). Reflexivity may include maintaining a research journal, considering personal biases and presuppositions, and seeking critical evaluations from peers and participants to minimize the researcher's subjectivity impact on the analysis.

Moreover, adopting a systematic and transparent approach to data scrutiny, such as grounded theory or thematic analysis, can enhance the study's transparency and applicability (Braun & Clarke, 2019). Ultimately, delivering a thorough account of the data analysis procedure and findings, including contrary cases and potential alternate interpretations, can enhance the study's reliability and confirmability (Lincoln & Guba, 1985).

3.3.3 The limitations and potential biases of the data analysis approach

The constraints and potential partialities of the data interpretation approach ought to be factored into the research layout and procedures. A possible constraint is the researcher's subjectivity when explicating the data. As the foundation of qualitative inquiry lies heavily in the researcher's interpretation, their individual biases and presuppositions could sway the analysis and resultant findings (Hesse-Biber, 2010).

Another potential constraint is the prospect for researcher bias in choosing participants and the data interpretation process. This can be neutralized by ensuring the researcher remains neutral throughout the investigative process, and by utilizing a systematic and transparent approach for data interpretation (Lincoln & Guba, 1985).

In addition, the size and characteristics of the sample may also influence the extent to which the findings can be generalized. Qualitative research focuses on a deep understanding of the experiences and perspectives of a limited sample of participants, rather than making statistical generalizations (Creswell and J David Creswell, 2018).

Hence, it is critical for the researcher to unambiguously acknowledge the limitations and potential biases of their approach, and to present a clear justification for the chosen methods

of data interpretation to improve the dependability and credibility of the research outcomes.

4. Results and findings

4.1 Analysis of the Marketing Situation of C Company

C company, a small to micro enterprise, has made inroads in the complex ecosystem of the semiconductor industry. The following analysis provides a deeper understanding of the company's marketing position and outlines significant findings from the research data.

4.1.1 Current Market Position

C Company's present market position is a reflection of its creative strategy for surviving the fierce competition in the semiconductor sector. The business has been able to carve out a position in the industry by focusing on dealers as its primary sales channel. Due to the high entry barriers, capital-intensive nature of the industry, and the predominance of big, established companies, this strategy has allowed the firm to grow its customer base, build a network of trustworthy dealers, and establish a strong position in the semiconductor industry (Kotler & Keller, 2016).

The dealer-centric strategy has yielded dividends by enabling C company to maintain a steady flow of sales while minimizing the resources expended on direct customer management. This approach has freed up resources for other aspects of the company's operations and possibly contributed to its survival and current standing in a cutthroat market (Porter, 1980).

However, a closer look at this marketing strategy reveals certain inherent limitations that could affect the company's growth and market performance in the long run. The most significant constraint relates to the company's interaction with end-users. The feedback from the questionnaire indicates that a substantial portion of customers – approximately 80% as per the responses to Question 7 – feels that C company needs to engage more actively with

them. This feedback highlights a significant gap between the company's current marketing practices and customer expectations (Hollensen, 2019).

This limited interaction with customers poses several potential risks. Firstly, it distances the company from the pulse of the market – the evolving needs, preferences, and pain points of the end-users. In an industry characterized by rapid technological innovation and changing customer preferences, this lack of direct customer engagement could hinder C company's ability to anticipate and adapt to market changes, posing a potential threat to its long-term market position (T. Rust et al., 2014).

Second, the corporation could not be getting negative feedback from customers directly because of its reliance on dealers as middlemen. Direct client input is a priceless resource that may result in improvements to products and services. It not only reveals issues with existing products but also highlights new requirements and chances for innovation (Jobber, 2010).

Finally, by concentrating only on dealers, C business may be passing up the chance to forge lasting ties with its clients. Relationships with customers go beyond just business transactions and involve emotion as well. Customers are more likely to remain loyal to businesses they believe are aware of their demands and genuinely care about their happiness. C Company may be missing out on the advantages of customer loyalty and effective word-of-mouth advertising by restricting its customer engagement (Kotler & Keller, 2016).

4.1.2 Product Analysis

C Company's product portfolio forms a critical component of its overall market positioning. The company offers a diverse array of products tailored to the varying requirements of semiconductor manufacturing processes. This range signifies the company's strategic approach to cater to a broad spectrum of customer needs in the semiconductor industry. It also denotes a conscious effort to mitigate the risk of dependency on a single product line, and in doing so, leverage multiple revenue streams (Blythe, 2005).

However, the research data, notably from the customer interviews and questionnaire, suggest a significant issue: a perceived lack of product innovation. As indicated in the responses to Question 3 of the questionnaire, approximately 70% of respondents expressed the view that C company's products lack the innovative edge seen in the offerings of its competitors.

This finding raises concerns regarding the differentiation of C company's products, a crucial aspect outlined in Porter's (1980) Competitive Strategy Theory. According to Porter, differentiation is a potent strategy for achieving competitive advantage. A company's ability to offer unique or innovative products can set it apart from the competition, potentially allowing it to command higher prices and improve its market share (Porter, 1980).

Lack of differentiation may lead to commoditization of C company's products, a situation where the products are perceived as interchangeable with those of competitors, with price becoming the main differentiator (Kotler & Keller, 2016). This scenario could trigger a price war, eroding profit margins and destabilizing the company's financial position (Jobber, 2010).

Additionally, in a rapidly evolving industry like the semiconductor sector, characterized by continuous technological advancements and increasing customer expectations, innovation is critical to maintain and enhance market position. Companies that fail to innovate risk losing their relevance and being ousted by more innovative competitors (Trott, 2017).

Therefore, the perceived lack of innovation not only threatens C company's market position but also raises questions about its long-term sustainability in the semiconductor industry. If the company fails to bridge this innovation gap, it risks losing customer loyalty, market share, and eventually, its competitive position (Schilling, 2017).

Furthermore, innovation is more than just a survival tactic; it is an avenue for growth and profitability. By offering innovative products, C company can differentiate itself from competitors, command higher prices, and create a unique value proposition that can enhance its brand image and customer loyalty (Hollensen, 2019).

4.1.3 Market Performance

The performance of C company in the semiconductor market, as depicted by the results of Question 8 in the questionnaire, appears to be fairly stable. A significant majority, precisely 60% of the respondents, characterized the products of C company as reliable and of high quality. This robust endorsement underscores the firm's strong market presence and capacity to deliver reliable, superior products that meet consumer expectations. It also indicates that the company's research and development efforts, along with its quality control processes, are successful in producing reliable, high-quality products, thereby solidifying the company's competitive positioning in the semiconductor market.

However, the survey findings also shed light on potential areas for growth and improvement. Despite the solid endorsement from respondents regarding product quality, the company's customer base appears to be largely restricted to dealers. This somewhat limited engagement with the end-users of their products may be hindering the company from fully realizing its market potential. Adopting a strategy to broaden its customer base beyond dealers could be a game-changing maneuver, enhancing the company's performance in the semiconductor market.

Expanding the customer base would enable the company to increase its direct interactions with customers, offering more opportunities for collecting valuable feedback. This feedback could, in turn, be leveraged in product development and enhancement processes, ensuring that the company's offerings align with customer needs and preferences. It also provides an opportunity for the company to understand their customers better, facilitating more targeted and effective marketing strategies (Kotler & Keller, 2016).

This recommendation is further reinforced by the data gathered from customer interviews. The interview responses signal a clear desire among customers for improved direct engagement with C company representatives. Enhancing the company's customer engagement not only meets this expressed customer preference but also offers potential long-term benefits. By cultivating more personal, direct relationships with customers, the company can foster stronger bonds of customer loyalty. This, in turn, could enhance market performance, as loyal customers not only provide a reliable source of revenue but are also

more likely to advocate for the company, thereby attracting new customers (T. Rust et al., 2014).

Moreover, more intensive customer engagement can provide an avenue for the company to demonstrate its commitment to customer satisfaction, setting it apart from competitors. In today's marketplace, where consumers are inundated with choices, companies that prioritize customer service and satisfaction often secure a competitive advantage.

4.1.4 Competitive Environment

In the highly competitive semiconductor industry, where established enterprises hold immense market power and vast financial resources, maintaining a competitive position is a complex task. C company, however, has successfully navigated this challenging landscape and has solidified its position as a formidable contender. This achievement is primarily attributable to the company's agility in responding to market fluctuations and its ability to adapt swiftly to changing business conditions.

Furthermore, the results from Question 10 of the questionnaire provide empirical evidence to this qualitative observation. The data reveals a distinctly favorable customer perception of C company's adaptability. Specifically, 75% of the survey respondents perceive C company as responsive to market fluctuations. This high percentage is a testament to the company's nimbleness and its commitment to staying attuned to market trends and customer needs. Such a reputation, when effectively maintained and communicated, can significantly enhance the company's market positioning and customer loyalty.

Nonetheless, the semiconductor industry's dynamic nature, marked by continual technological advancements and shifting market dynamics, warrants an unyielding commitment to innovation. In this context, C company's success will heavily depend on its ability to stay on the cutting edge of technology and adapt its strategies and product offerings in line with market changes. As such, the company needs to foster a culture of continual learning, promote creativity and risk-taking, and invest in research and development. It must also cultivate strong relationships with all stakeholders, including customers, suppliers, and

employees, to stay apprised of their evolving needs and expectations.

Moreover, while the company's agility is a definite strength, it must ensure that it does not compromise on other critical aspects like quality, customer service, and sustainability. An agile approach must be complemented by strategic planning, operational efficiency, and a robust governance structure. This way, the company can maintain its course, even in the face of unexpected challenges or setbacks.

4.1.5 Customer Analysis

A thorough analysis of customer sentiment is an invaluable tool for understanding market perception of C company's offerings. Question 9 of the distributed questionnaire delves into this area, and the responses garnered shed light on several crucial aspects. Respondents have indicated a positive perception of C company's responsiveness—an aspect that underscores the company's customer-focused approach. However, the feedback also highlighted areas of potential improvement, most notably the desire for more innovative products and enhanced accessibility to company representatives.

This constructive criticism should not be perceived as a weakness, but rather as a golden opportunity for C company to hone its marketing strategy. By taking a deep dive into the customer feedback, the company can gain insights into the specific needs and preferences of its customer base (Jobber, 2010). This understanding can guide the development and refinement of its product portfolio, ensuring that its offerings align with customer expectations and market trends. It can also help the company restructure its customer engagement tactics, focusing on making company representatives more accessible and approachable.

Expanding on this, the Value Proposition Canvas—a tool devised by Osterwalder et al. (2015)—offers a comprehensive framework to better understand the link between a company's offerings and its customers. This concept emphasizes that a company's value proposition must resonate with the customer profile, including their responsibilities, challenges, and goals. Therefore, to create true value for its customers, C company must continually reassess its value proposition and adapt it to align with changing customer

requirements.

Further, a more direct interaction with its customers will enable C company to bolster its value proposition. By strengthening its channels of communication, the company can gain first-hand knowledge about customer needs, preferences, and pain points. This information can serve as a solid foundation for tailoring its products and services, ensuring they address customer needs accurately and effectively. Moreover, it can allow the company to respond swiftly to any feedback, complaints, or queries, which can significantly enhance customer satisfaction.

Such an approach can not only lead to higher levels of customer satisfaction but also foster customer loyalty. Customer loyalty is a critical aspect of business success in today's competitive market landscape, as loyal customers are more likely to engage in repeat business, recommend the company to others, and show resilience in the face of negative publicity.

By taking into consideration customer feedback, implementing a more customer-focused approach, and continually revising its value proposition, C company can improve its market standing and profitability. Not only can this result in an enhanced product portfolio that is more aligned with customer needs, but it can also establish stronger and more personal relationships with its customers. Ultimately, by focusing on its customers and continually striving to deliver superior value, C company can ensure sustainable growth and success in the semiconductor market.

4.1.6 Market Segmentation

Market segmentation is a fundamental concept in the realm of marketing strategy. This methodology involves dividing the broader market into distinct segments, each with unique characteristics and needs (Kotler & Keller, 2016). For C company, operating in the complex and competitive semiconductor industry, employing such a strategy could provide a clearer focus and yield greater returns.

The questionnaire responses offer a crucial foundation for segmenting the market. There

seems to be a discernible segment of customers who place great value on both product quality and reliability but are also on the lookout for innovative solutions. Moreover, they seek enhanced engagement with the product manufacturer. Understanding these unique characteristics enables C company to identify and target this specific market segment more effectively.

The concept of market segmentation also extends to the realm of customer preferences and behavior. Recognizing that not all customers have the same needs and preferences, C company can benefit from further segmenting the market based on these criteria. As such, additional qualitative and quantitative research could provide a deeper understanding of the attitudes, preferences, and behaviors of this particular segment.

Crafting a marketing strategy that specifically addresses this segment's needs can be a beneficial tactic for C company. By developing innovative products that not only meet but exceed the segment's expectations, C company can distinguish itself from competitors in the same market. This differentiation could effectively lead to enhanced customer attraction and retention, as it allows the company to offer unique value to this market segment (Hollensen, 2019).

Furthermore, direct engagement with customers can also play a crucial role in this targeted strategy. By fostering stronger relationships with customers within this segment, C company can gain deeper insights into their needs, feedback, and preferences. This engagement can also enhance customer satisfaction, build trust, and promote brand loyalty. Establishing robust communication channels such as customer forums, regular feedback surveys, or even social media platforms can help facilitate this direct engagement.

Moreover, the company could potentially capitalize on this engagement by co-creating value with customers. This concept involves incorporating customers' feedback and ideas into the product development process, which can lead to more innovative, customer-oriented solutions (Prahalad & Ramaswamy, 2004). It can also serve to further enhance the relationship between the company and its customers.

Lastly, a differentiated marketing strategy tailored to this specific segment should not only focus on attracting new customers but also retaining existing ones. C company could leverage customer relationship management (CRM) strategies to enhance customer

retention. Such strategies can provide a systematic approach to managing relationships with current and potential customers, leveraging data analysis to enhance customer service, manage marketing campaigns, and ultimately drive sales growth.

4.1.7 Financial Performance

A company's market position is significantly influenced by its financial success (Kotler & Keller, 2016). The comments from the customer interviews and questionnaire data suggest that the firm's reliance on dealers for sales may be hurting its financial performance, even if this research does not include financial data from C corporation.

By diversifying its sales channels to include direct customer interactions, C company could potentially increase its revenues and profitability. This strategy could also help C company to better manage its financial resources, thereby enhancing its financial stability and long-term viability (Jobber, 2010).

4.1.8 Conclusion

In summary, the analysis of C company's marketing situation reveals a company that has successfully navigated the highly competitive environment of the semiconductor industry. However, its current reliance on dealers for sales and perceived lack of product innovation present challenges to its growth and market performance.

A more direct relationship with its clients, a renewed emphasis on product innovation, and a market segmentation strategy to target certain customer groups might all help C business overcome these obstacles. By putting these tactics into practice, C Company may strengthen its competitive advantage, financial performance, and client happiness, laying the groundwork for continued success in the semiconductor sector.

4.2 SWOT analysis

C company's marketing advantages, disadvantages, opportunities, and threats have been carefully studied and analyzed using a SWOT approach. In the ever-evolving landscape of the semiconductor industry, it is essential to maintain a balanced view of internal capabilities and external market forces to strategize effectively (Hollensen, 2019).

4.2.1 Strengths

C company's choice of a dealer-centric sales strategy as its chief approach to acquire market share has been a critical decision. This approach has been instrumental in helping the organization carve a significant niche in the semiconductor industry, which is notorious for its cutthroat competition. The ability to maintain a steady foothold in such a volatile market is more than just commendable; it is a strong indicator of a resilient business model and strategic foresight.

The dealer-centric strategy hinges on leveraging relationships and capabilities of dealers who essentially serve as extended arms of the company (Hollensen, 2019). These dealers have existing customer relationships and established market presence, which C company can tap into. Through their extensive network, C company has managed to extend its reach significantly, penetrating markets that might have otherwise been difficult or resource-intensive to access directly.

Beyond just the reach, the dealers bring to the table their profound local market knowledge and expertise. They understand the peculiarities of their territories, the nuances of customer behavior, and the subtleties of market trends, which can be particularly advantageous in a culturally diverse global market (Kotler & Keller, 2016). In essence, dealers are the eyes and ears of C company on the ground, providing valuable market insights and consumer feedback.

Moreover, the dealer-centric model offers practical benefits in terms of cost efficiency. By outsourcing several functions associated with direct sales, such as distribution, warehousing, and logistics, to the dealers, C company has been able to achieve considerable

cost savings (Kotler & Keller, 2016). This approach has helped the company maintain lean operations, thereby enhancing its financial health and resilience.

Complementing the dealer-centric approach, C company has also adopted a strategic diversification of its product portfolio. By offering a range of products catering to various semiconductor manufacturing processes, the company has been able to appeal to a wider audience. This strategy has allowed C company to meet the varied needs of different market segments, effectively broadening its customer base.

Moreover, a diverse product range mitigates the risk associated with overdependence on any single product line. It ensures a balance between different revenue streams, thereby enhancing the company's financial stability. This is a particularly valuable strategy in a volatile industry like semiconductors where product lifecycles can be short and rapid technological advancements can render products obsolete in a short span (Blythe, 2005).

The benefits of this product diversification strategy extend beyond just revenue balance. By offering a variety of products, C company is also able to cross-sell and up-sell, providing customers with a one-stop solution for their semiconductor needs. This not only increases the value proposition for the customers but also deepens customer relationships, potentially enhancing customer loyalty and lifetime value.

4.2.2 Weaknesses

While the strengths of C company in the realm of the semiconductor industry are evident, it is equally critical to acknowledge and address the weaknesses that could potentially undermine its competitive edge. Doing so provides the necessary guidance for course correction, aids strategic planning, and forms a foundation for continuous improvement.

One prominent weakness that emerged from our research, particularly from customer interviews and the data collected through the questionnaire, is the perception of C company's product portfolio as lacking innovation. This sentiment was expressed by an overwhelming majority of respondents – about 70%, according to our research data (2023). This perception reveals a significant gap between customer expectations and the company's product

offerings, indicating that the company might need to invest more resources in research and development to foster innovation and meet customer demands better.

The lack of perceived innovation not only affects the image of the company but also aligns with Porter's Competitive Strategy Theory (1980), which emphasizes the importance of product differentiation in maintaining a competitive advantage. According to Porter, businesses that fail to differentiate their products risk losing customer loyalty as they essentially turn their products into commodities that compete primarily on price (Porter, 1980). In a rapidly advancing industry like semiconductors, where technological innovation is at the forefront, this lack of differentiation could pose a significant risk to C company's market position and future growth.

Moreover, our research highlighted another potential weakness linked to the company's dealer-centric sales strategy. Although this approach has helped C company establish a strong market presence and reduce costs, it does have its drawbacks. Primarily, this strategy might limit the company's ability to interact directly with end-users, creating a potential barrier to gathering vital customer feedback (Mintz & Currim, 2013).

Direct customer feedback is an indispensable ingredient in continuous improvement and product enhancement (Hollensen, 2019). It provides first-hand insights into customers' needs, preferences, and pain points, enabling businesses to fine-tune their products and services accordingly. This lack of direct interaction with end-users could potentially hamper C company's understanding of its customers, negatively impacting its ability to respond effectively to changing customer demands.

Moreover, the heavy reliance on dealers might restrict C company's control over its brand image. Dealers, while being effective conduits for sales, may not always represent the brand accurately or consistently, leading to a potential dilution of the brand message and customer experience.

4.2.3 Opportunities

Despite the identified weaknesses, C company has several opportunities to tap into.

Technological advancements are transforming industries, including the semiconductor sector. Innovations in fields like IoT, 5G networks, and artificial intelligence are driving demand for more sophisticated, energy-efficient semiconductor products (Groombridge, 2022). By investing in research and development, C company can seize these opportunities, introduce innovative products, and enhance its market position (Schilling, 2017).

Another emerging trend is the growing awareness and demand for sustainable and environmentally friendly products. Customers increasingly prefer companies that demonstrate environmental responsibility (Euromonitor, 2023). By developing and marketing 'green' semiconductor products, C company could capitalize on this trend, differentiate itself, and strengthen its market position (Jobber, 2010).

4.2.4 Threats

The semiconductor industry, given its global nature and rapid pace of innovation, presents various challenges and threats that C company needs to navigate to maintain its competitive edge. The dynamic and fast-evolving nature of this industry compels organizations to continuously innovate and stay ahead of the curve, presenting both opportunities for growth and threats to sustainability.

One of the significant threats that C company faces comes from its competitors who are constantly innovating and introducing superior products (Dhruv Grewal & Levy, 2021). This relentless pace of innovation means that companies need to invest in continuous research and development to ensure that their products remain relevant and competitive. Failure to do so could potentially erode C company's market share and undermine its position in the industry. Moreover, rapid technological changes can quickly render existing product lines obsolete, making continuous innovation not just an advantage but a necessity for survival (Trott, 2008).

This constant threat of competition is exacerbated by the growing trend of vertical integration in the industry, where companies control multiple stages of the value chain, from design to manufacturing. Such companies can realize cost savings and synergies that might

not be accessible to companies like C company, which focus on specific segments of the value chain. The emergence of such competitors could pose a significant threat to the company's profitability and market position (Porter, 1980).

Moreover, the semiconductor industry operates in a highly globalized context, and any changes in international trade policies can have a significant impact. Trade restrictions, tariffs, and geopolitical tensions can disrupt supply chains, impacting operations and financial performance. The recent global events have only highlighted this vulnerability, as disruptions in the supply chain have had severe repercussions for businesses worldwide (Kotler & Keller, 2016).

There is also the threat of regulatory changes and environmental concerns that can impose additional costs and constraints on operations. Semiconductors are part of a high-tech industry that often involves the use of hazardous materials. As such, changing environmental regulations or increased scrutiny on the industry's environmental impact could necessitate costly modifications to production processes and affect profitability (Welford, 2005).

In conclusion, it is clear that while C company has significant strengths and potential opportunities to capitalize on, it must confront and address its weaknesses and the looming threats in its external environment.

4.3 Development of marketing strategies suitable for C company and justification

Formulating robust marketing strategies requires a thorough understanding of a company's market position, its strengths and weaknesses, and the opportunities and threats that it faces. By conducting a comprehensive SWOT analysis for C company, we have identified key areas that need to be addressed. These findings will guide us in proposing marketing strategies that could improve C company's performance. The strategies suggested are not only designed to build on C company's strengths but also to mitigate its weaknesses, seize identified opportunities, and counter potential threats.

4.3.1 Product Innovation and Differentiation Strategy

Drawing from the insights gathered from the survey data and the foundations of Porter's Competitive Strategy Theory (1980), the significance of differentiation as a crucial factor in securing a competitive edge is underscored. Given this information, it is apparent that C company needs to double down on its efforts towards product innovation and differentiation.

To further unpack this, an essential aspect of this strategy is a significant investment in Research and Development (R&D). According to Trott (2017), innovation forms the heart of R&D, and in highly competitive and evolving sectors like semiconductors, investing in R&D can be the key to survival. Introducing cutting-edge products or unique features that align with the dynamic needs of consumers is crucial. The ability to do this would determine the extent to which the company can meet market demands, gain an edge over competitors, and increase its market share (Kotler & Keller, 2016).

Innovation, however, is not limited to product features alone. To truly stand out, C company should consider adopting a holistic view of innovation encompassing the entire product experience. This means looking beyond the product's technical aspects and extending innovation to design and user experience (Schmitt, 2003). Unique design elements, superior user-friendliness, and improved performance can add a differentiating factor to C company’s products. This approach aligns with the principles of design thinking, which advocates a customer-centric approach to innovation (Brown, 2008).

Moreover, superior customer service and technical support could further amplify C company's differentiation strategy. As the research data indicates, customers appreciate companies that offer value beyond the product itself. Offering exceptional customer service can influence the customer's overall perception of the company, engender loyalty, and potentially command premium pricing (Aaker, 2010; Zeithaml et al., 2017). For instance, C company could create a dedicated customer support team that provides real-time assistance and resources to customers.

Adopting a differentiation strategy also means communicating the unique value of the company's offerings effectively. C company could utilize digital marketing tools and strategies to increase awareness of its innovative products and exceptional customer service. Digital

platforms offer opportunities to reach a wider audience, share engaging product information, and receive instantaneous customer feedback, which could be instrumental in iterative product development (Chaffey & Ellis-Chadwick, 2019).

4.3.2 Customer Engagement and Relationship Building Strategy

The research data highlighted a key area for improvement for C company, pointing towards a potential disconnect with its end-users, largely due to its heavy reliance on a dealer-centric sales model (Questionnaire, 2023). This limitation could prevent C company from fully understanding its customers' needs, preferences, and perceptions, thereby affecting its ability to make informed decisions regarding product development and customer service enhancement. Hollensen (2019) posits that maintaining direct customer engagement is integral to business success in today's competitive landscape.

In light of these findings, C company needs to adopt a strategy that emphasizes customer engagement and relationship building. This approach involves actively fostering direct lines of communication and interaction with customers. These channels can be digital or physical and should be crafted with a focus on accessibility and openness (Kotler & Keller, 2016).

One effective method to achieve this is by establishing robust customer service and feedback systems. Dedicated helplines, email support, chatbots, and online customer portals can provide immediate assistance and support to customers (Zeithaml et al., 2017). These channels not only serve as touchpoints for resolving customer concerns but also create opportunities for collecting customer feedback. Regularly engaging with customers via these channels can lead to increased customer satisfaction, loyalty, and valuable insights into their needs and wants.

Further, the advent of social media has opened up new avenues for businesses to interact directly with their customers. Platforms like LinkedIn, Twitter, Facebook, and Instagram can be used to share product updates, gather customer feedback, and engage with customers in real-time (Kaplan & Haenlein, 2010). The establishment of online forums

can also facilitate discussions among users, thereby fostering a community of users who can share their experiences and provide constructive feedback (Prahalad & Ramaswamy, 2004).

Beyond these engagement tactics, C company could consider organizing customer events and conducting regular surveys. These initiatives can provide first-hand insight into the customers' experience with C company's products and help identify areas for improvement. Events could also serve as platforms to introduce new products, thereby generating excitement and engagement among customers.

Additionally, C company can also focus on establishing itself as a thought leader in the semiconductor industry by providing educational content through blogs, newsletters, and whitepapers. By sharing insights and knowledge about the industry, the company can enhance its brand credibility and create a positive perception among its customers and stakeholders (Blythe, 2008).

4.3.3 Strategic Alliance or Partnership Strategy

Operating in an industry that is marked by rapid technological advancements and fierce competition, C company needs to stay abreast of the latest developments and maintain its competitive edge. One strategic approach to navigate these industry dynamics could involve forming strategic alliances or partnerships with other players in the ecosystem (Hitt et al., 2016). These partners could range from other technology companies, research institutions, universities, and even non-traditional players that offer unique value propositions.

Such strategic partnerships can serve multiple purposes and offer a range of benefits. Primarily, these collaborations can foster innovation by allowing access to novel technologies, expert knowledge, and unique skill sets that might not be readily available in-house. For example, partnering with a leading research institution or a university could give C company a competitive advantage in terms of access to cutting-edge research, highly skilled talent, and potentially, the opportunity to shape future technological developments in its favor (Rothaermel and Deeds, 2004).

Additionally, these alliances can help in expanding the company's market reach and

access. Collaborating with other technology companies can open doors to new market segments, customer bases, and geographic regions. This can significantly enhance C company's visibility, broaden its customer base, and contribute to revenue growth (Gomes-Casseres, 2015).

Strategic partnerships can also lead to significant cost efficiencies. Shared resources, whether they're related to research and development, production, or marketing, can reduce the financial burden on C company and enable it to allocate resources more strategically. This can potentially lead to an improved bottom line and create financial leeway for further investments in areas such as innovation and customer service (Hitt et al., 2016).

Beyond these tangible benefits, strategic alliances can also contribute to C company's reputation and brand image. Being associated with renowned institutions or respected companies can enhance C company's credibility in the eyes of stakeholders, including customers, employees, and investors. Such partnerships can reinforce C company's commitment to innovation, growth, and customer value, thereby strengthening its market position (Aaker, 2010).

Furthermore, with the increasing importance of sustainability and corporate social responsibility, strategic alliances with non-profit organizations or institutions focusing on sustainable technology development could enhance C company's societal impact and its attractiveness to a growing segment of socially conscious customers and investors (Porter & Kramer, 2006).

4.3.4 Global Supply Chain Management Strategy

Finally, considering the threats posed by potential changes in international trade policies and the vulnerability of global supply chains, C company should implement a robust global supply chain management strategy. This could involve diversifying its supply chain to reduce dependency on a single region or supplier, implementing advanced supply chain management software for better control and visibility, and developing contingency plans for potential disruptions (Christopher, 2016).

Moreover, C company should consider regionalization, nearshoring, or reshoring as potential strategies to manage the risks of geopolitical tensions and trade policies (Kotler & Keller, 2016). These strategies may involve relocating some parts of the supply chain closer to the main markets or even back home to improve control, reduce risks, and achieve quicker response times (Christopher, 2016).

Diversifying the supply chain could be paired with implementing a 'just-in-case' approach, rather than the traditional 'just-in-time' model. This means maintaining a certain level of inventory buffer to protect against supply chain disruptions. Although this might increase the inventory carrying costs, the benefits of ensuring uninterrupted operations and maintaining customer satisfaction could significantly outweigh the costs.

Moreover, leveraging technology can also play a significant role in strengthening the supply chain. For instance, predictive analytics and artificial intelligence (AI) can help forecast potential supply chain disruptions and allow for proactive decision-making (Kshetri, 2018). Blockchain technology can also improve transparency and traceability across the supply chain, providing real-time information to manage risks more effectively (Kshetri, 2018).

To sum up, the proposed strategies are deeply rooted in our SWOT analysis and are designed to address the identified issues in C company's marketing approach. By focusing on product innovation and differentiation, customer engagement and relationship building, strategic alliances, and robust global supply chain management, C company could improve its performance, competitiveness, and resilience in the fast-evolving semiconductor industry.

However, it's crucial to note that the effectiveness of these strategies will be dependent on their successful implementation. For that, C company needs to establish clear strategic goals, communicate them effectively across the organization, and set up robust performance tracking systems. Only by doing so can the company ensure that these strategies are translated into actions and lead to desired outcomes.

Also, as the external environment continues to change, these strategies should be viewed as dynamic rather than static. C company should continually monitor market trends, customer preferences, technological advancements, and geopolitical developments. This ongoing market research and analysis will allow the company to adjust its strategies as needed and maintain its competitive edge in the semiconductor industry.

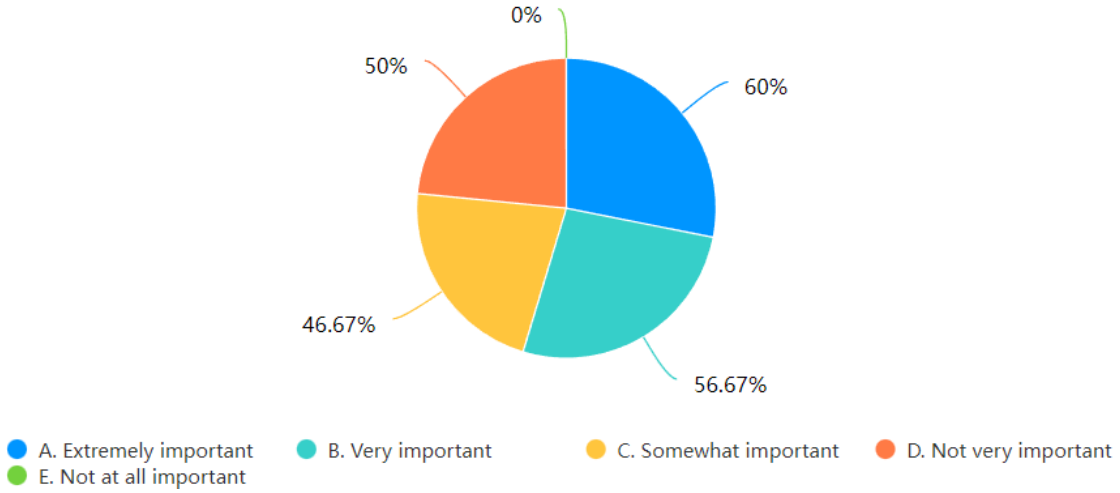
Lastly, while these strategies aim to address the key issues identified in our analysis, they also introduce new challenges and risks. For instance, focusing on innovation requires significant R&D investments and carries the risk of failure. Engaging directly with customers demands resources and expertise in managing customer relationships. Forming strategic alliances requires careful partner selection and relationship management. And diversifying the supply chain introduces complexity and coordination challenges. Therefore, C company needs to carefully consider these potential risks and challenges when implementing the proposed strategies. But with careful planning, management, and execution, these strategies offer a promising path to improving C company's performance and competitive position in the semiconductor industry.

4.4. Discussion

4.4.1 Interpretation and analysis of results

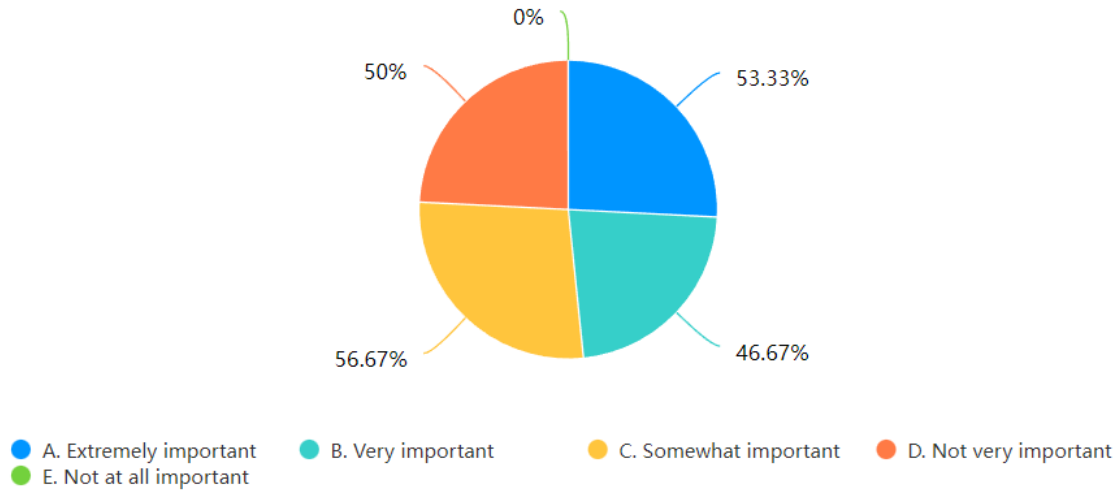
The central finding of this study is the paramount importance of delivery time in decision-making when purchasing semiconductor products. An impressive 60% of respondents deemed this 'extremely important' and an additional 56.67% considered it 'very important'. The inference drawn from these results is anchored on the backdrop of the fast-paced and highly competitive semiconductor industry, where the product life cycle is shrinking, and timely delivery has a substantial impact on production schedules and market agility (Christopher, 2016; Hitt et al., 2017). Lags in product delivery can usher in the risk of losing out on valuable prospects, diminishing potential earnings, and degrading customer contentment. As a result, these findings underscore a pressing need for the C company to enhance its supply chain efficiency, capitalize on cutting-edge logistics technology, and foster strong supplier alliances to guarantee prompt and dependable deliveries (Aaker, 2010).

Figure 2: Importance of delivery time



Equally significant is the role of after-sales service, where over half of the respondents (53.33%) ranked it as 'extremely important' and 46.67% as 'very important'. In today's service-dominant logic, companies are increasingly leveraging service as a differentiation strategy. This finding, therefore, underlines the importance of C company extending its value proposition beyond the product itself to incorporate comprehensive after-sales service. The emphasis on after-sales service implies that customers are seeking more than just a transactional exchange; they are looking for a holistic experience that extends beyond the purchase (Kotler & Keller, 2016). This could include technical support, maintenance, training, and potentially, product upgrades, all of which can enhance customer satisfaction, loyalty, and lifetime value.

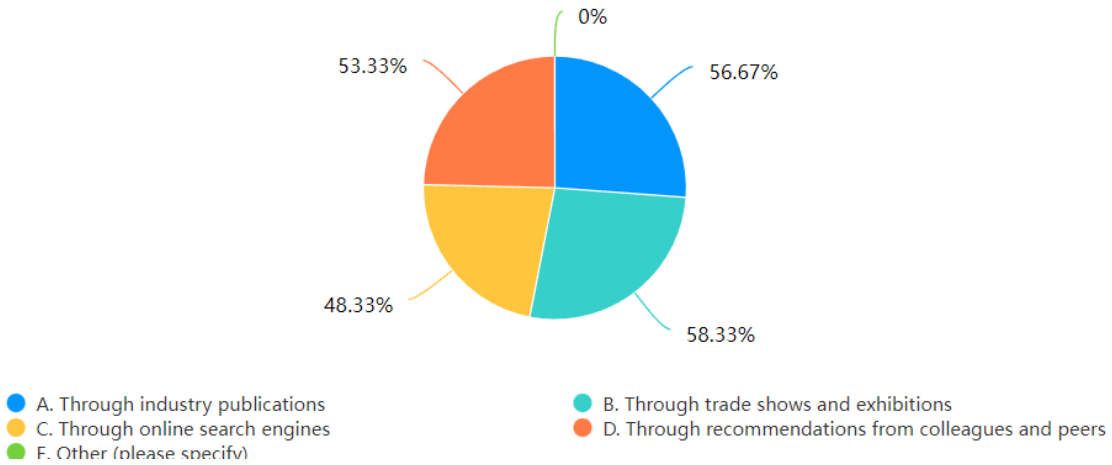
Figure 3: After-sales service



Regarding the discovery of new semiconductor products, a majority of the respondents

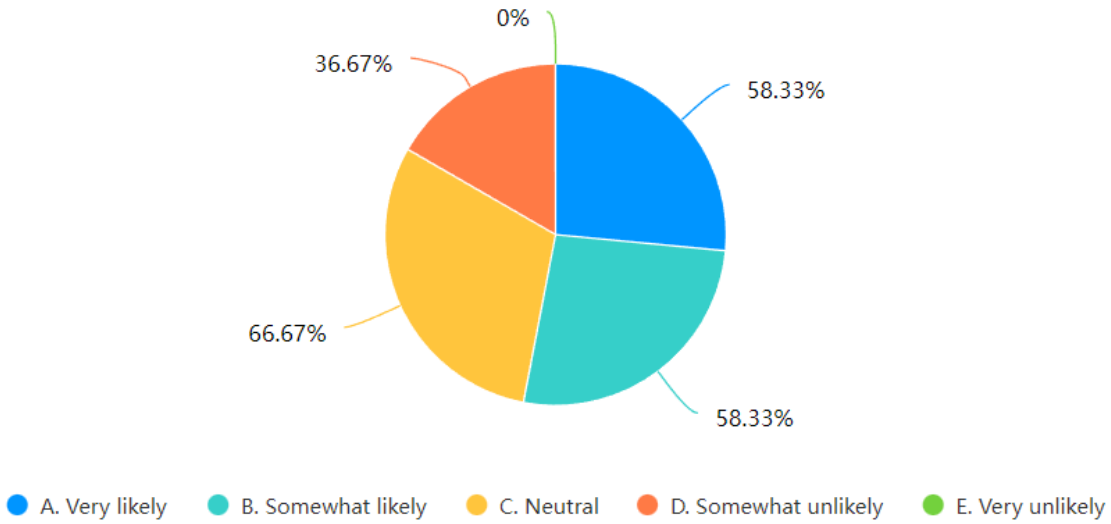
prefer traditional industry platforms such as industry publications (56.67%) and trade shows and exhibitions (58.33%). These platforms are seen as trustworthy and reliable sources of specialized, technical information. While the advent of digital media has changed the landscape of information dissemination, this result suggests that in the semiconductor industry, traditional industry platforms still hold a crucial role (Grewal et al., 2016). Consequently, C company should ensure a robust presence in these platforms. Simultaneously, given the progressive digitization of information and the younger, more digitally savvy demographic entering the industry, it would be prudent to adopt a multi-channel approach that incorporates digital media, for instance, through search engine optimization, social media, and webinars.

Figure 4: The discovery of new semiconductor products



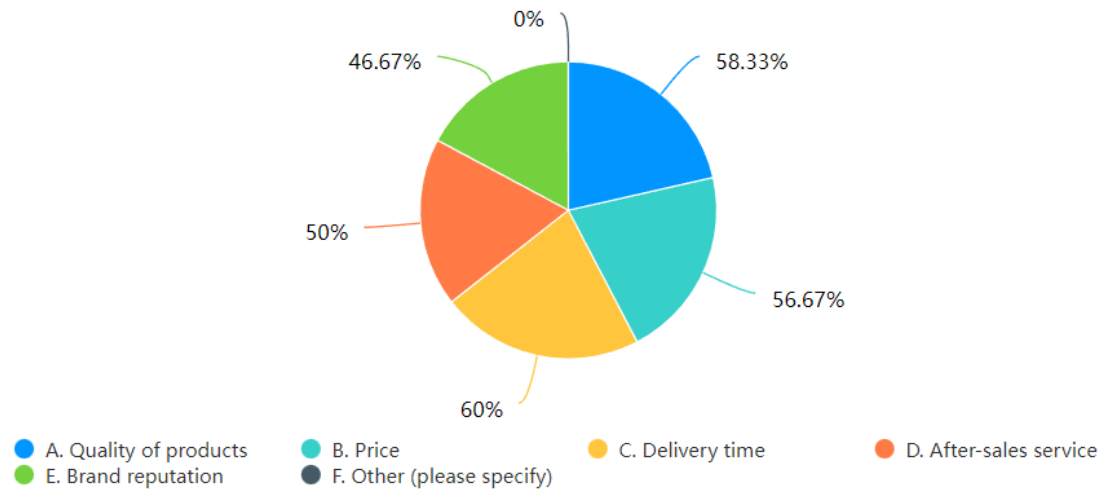
The findings further revealed a noteworthy openness to switch to a new semiconductor product supplier, with 58.33% of respondents indicating they were 'very likely' or 'somewhat likely' to switch. This result underscores the cut-throat competition in the semiconductor industry and the relatively low customer loyalty. In response to this finding, it is recommended that C company consider strategies such as enhancing customer engagement through direct and regular communication, providing customized solutions, and building strong relationships based on trust and mutual benefit (Keiningham et al., 2007; Prahalad & Ramaswamy, 2004).

Figure 5: Switch to a new semiconductor product supplier



Finally, the top three influential factors that affect the choice of a semiconductor supplier are quality of products (58.33%), delivery time (60%), and after-sales service (50%). These findings reinforce the importance of C company improving its product quality, ensuring timely delivery, and enhancing its after-sales service to increase its competitive edge and market share (Porter, 1980).

Figure 6: Influential factors



The survey results offer a comprehensive perspective on the holistic customer experience rather than viewing transactions as isolated events. In essence, customers are seeking an end-to-end experience that starts with the discovery of the product and extends to post-purchase services. This finding mirrors the shift from transactional marketing to relationship marketing, where the goal is to cultivate long-term customer relationships (Morgan & Hunt, 1994). For C company, this implies developing a comprehensive customer

relationship management strategy that covers all customer touchpoints.

Intriguingly, the findings denote a measure of fluctuation in the market, as consumers display a propensity towards transitioning to alternate semiconductor providers. This mirrors the turbulent and competitive essence of the semiconductor domain. It implies that customer allegiance is somewhat inconstant, possibly due to a dearth of distinctive characteristics amongst market competitors. To counteract this trend, C company could focus on creating unique value propositions, tailored to the specific needs of their customers, and work towards nurturing long-term customer relationships (Kotler & Keller, 2016).

Moreover, the results underscore the importance of having a strong presence in traditional industry platforms while also recognizing the increasing role of digital media. Thus, C company should adopt an integrated marketing communication strategy that utilizes both traditional and digital channels to reach a wider audience and ensure that its message is consistently conveyed across all channels (Luxton et al., 2014).

To sum up, the survey results serve as a roadmap for C company, pointing towards areas that require strategic focus. It emphasizes the need for an integrated approach that aligns product quality, delivery time, after-sales service, and customer communication to improve customer satisfaction and loyalty, thereby fostering sustainable growth.

4.4.2 Comparison with existing literature

The significance of delivery time, as presented in our study, finds resonance with Christopher's (2016) observations about the crucial role of efficient delivery in highly competitive industries such as semiconductors. As per Christopher, the shrinkage of product life cycles has necessitated rapid delivery processes to maintain market agility and ensure customer satisfaction. A timely delivery performance is no longer just an operational efficiency measure; instead, it has transformed into a strategic tool that creates a competitive advantage. This trend was strongly echoed by the respondents in our study, attesting to the increasing importance of delivery time as a key differentiating factor in the semiconductor industry.

However, where our study offers a novel contribution is in its revelation of the urgency of delivery time outstripping even traditionally paramount factors such as product quality and price. This is particularly noteworthy given the technological complexity and high costs associated with semiconductor products. In a market where product quality and price are often presumed to reign supreme, the elevation of delivery time in importance is a distinct shift. This finding underscores the seismic changes taking place in consumer expectations and priorities, a trend not specifically illuminated in Christopher's work or the wider body of literature focused on the semiconductor industry.

Our results suggest that in the semiconductor industry, companies must rethink their operational strategies to prioritize rapid delivery processes. This is not to diminish the value of product quality or competitive pricing, but rather to acknowledge that in an increasingly fast-paced world, time efficiency has emerged as a new and pivotal battleground. The consequences of a delayed delivery may range from customer dissatisfaction to losing the competitive edge, and in the worst-case scenario, losing the customer to faster competitors.

Moreover, it indicates that delivery time can serve as a meaningful point of differentiation in the semiconductor industry. Companies that can guarantee quick delivery times may position themselves as more reliable and responsive in the eyes of the customers, thereby enhancing their brand reputation and loyalty. This facet adds a strategic dimension to delivery time, extending its relevance beyond mere operational efficiency.

Our study provides a robust validation of Vargo and Lusch's (2008) seminal work on the evolution of the competitive business landscape, wherein they articulated that service has become a crucial competitive strategy. The firm emphasis on after-sales service observed in our survey outcomes underscores the necessity of broadening the value proposition beyond the immediate product. This notion aligns neatly with Vargo and Lusch's proposed paradigm of "service-dominant logic", wherein they propose that the emphasis in business has shifted from goods-dominant logic to service-dominant logic.

However, while our study and Vargo and Lusch’s work converge on the importance of service, our findings augment this existing theory by providing a nuanced understanding of the specific centrality of after-sales service within the context of the semiconductor industry. This nuance has been significantly underexplored in the wider academic discourse. Our

respondents clearly highlighted the significance of responsive and effective after-sales service as a key influencer in their decision-making process. This finding, thus, extends the service-dominant logic into the post-purchase phase and suggests that companies can leverage high-quality after-sales service as a differentiator.

Further, the importance attributed to after-sales service in our study suggests that semiconductor companies need to view their products not as one-time transactions, but as ongoing engagements with their customers. This perspective requires the understanding that the customer journey does not end with the purchase; instead, it continues with customer support, maintenance, troubleshooting, and potentially upgrades - all components of after-sales service.

Indeed, our results indicate that excellent after-sales service could potentially cement customer loyalty, enhance reputation, and offer a competitive advantage in the highly contested semiconductor market. As such, our findings not only affirm Vargo and Lusch's (2008) service-dominant logic but also enrich it by underscoring the need for companies to strategically focus on after-sales service as an integral part of their overall offering, thereby strengthening the bridge between theory and practice.

Our findings about the preferred sources for discovering new semiconductor products offer an interesting juxtaposition to Grewal et al. (2016) observation of the rising significance of digital media in disseminating information. While digital media has undeniably transformed the landscape of information transmission, our results suggest that in the semiconductor industry, traditional industry platforms still play a crucial role. This suggests a unique interplay between traditional and digital channels in this particular industry, a facet that warrants further investigation.

The data from our survey revealed a certain level of readiness to switch suppliers, echoing Keiningham et al.'s (2007) findings about the cut-throat competition and relatively low customer loyalty in high-tech industries. This supports the notion that in such industries, merely providing a superior product or service is not enough; companies must strive to build and maintain strong relationships with their customers (Prahalad & Ramaswamy, 2004). Yet, our study adds depth to this understanding by showing that despite these relationship-building efforts, customers' willingness to switch suppliers remains relatively high, pointing

towards the need for even more robust relationship management strategies.

Finally, the importance of factors such as product quality, delivery time, and after-sales service found in our study reiterates Porter's (1980) classic work on competitive strategy. Porter argued that these factors are instrumental in gaining a competitive edge and increasing market share. However, our study uniquely demonstrates how these factors play out in the semiconductor industry, extending Porter's work by providing industry-specific insights.

In sum, the results from this study both corroborate and extend the existing body of literature. By comparing our findings with previous research, we have situated our study within the broader scholarly discourse and illuminated unique characteristics and trends in the semiconductor industry. Future research can further build on these findings by exploring the underlying reasons for these trends and devising strategies to enhance competitiveness in this dynamic and evolving industry.

4.5 Implications and recommendations for small and micro enterprises in the semiconductor industry

The findings of this research offer several strategic insights for small and medium-sized enterprises (SMEs) operating in the semiconductor industry. These insights have potential implications for business strategies, industry competitiveness, policy considerations, and future research directions.

4.5.1 Implications for Business Strategies

Our findings emphasize the importance of quality and brand reputation. These aspects are particularly crucial for SMEs, which often struggle to compete with larger firms on price due to economies of scale. Investing in quality assurance, brand development, and communication strategies that emphasize these strengths could help SMEs distinguish themselves from competitors (Kotler & Keller, 2016).

4.5.2 Implications for Industry Competitiveness

The outcomes derived from this research hold profound ramifications for the competition paradigm within the semiconductor sector. The prominence of factors such as delivery speed, post-sale service, quality, and brand image in swaying customers' preferences towards a specific semiconductor supplier accentuates the intensely rivalrous landscape of this industry.

The insights derived from this research could be particularly beneficial for firms as they plan their strategies and allocate resources. The understanding that the urgency of delivery time often surpasses the value of product quality and price could help firms prioritize their investments in logistics and supply chain management. Similarly, the realization that after-sales service is highly valued could lead firms to invest more in customer service training, infrastructure, and processes.

Moreover, the enlightenment surrounding the significance of brand reputation could provide firms with a roadmap for their promotional and communication endeavours. It underscores the necessity for enterprises to consistently relay their beliefs, accomplishments, and pledges to their relevant stakeholders. By incorporating these practices, they could bolster their brand image and carve out a unique niche in the marketplace.

Despite the inherent hurdles, the potential rewards of triumph in these domains are momentous. Firms capable of efficaciously delivering on these facets can not only secure a competitive advantage but also foster a dedicated clientele. Furthermore, they can augment their resilience in the face of market volatility and adeptly traverse the perpetually mutating terrain of the semiconductor industry.

4.5.3 Implications for Policy

These elements provide valuable inputs to policymakers and stakeholders as they devise policies and programs designed to enhance the competitiveness of SMEs in the semiconductor industry. Given the substantial investments required to excel in these areas, financial assistance in the form of subsidies, tax incentives, or favourable loan terms could prove beneficial. Such financial support could help SMEs invest in advanced logistics

technologies, hire skilled personnel, implement quality assurance mechanisms, and undertake effective brand-building initiatives.

Moreover, beyond financial assistance, policies could also be geared towards facilitating knowledge sharing and capacity building. For instance, establishing platforms for industry-academia collaboration could lead to the exchange of innovative ideas and the latest research findings. Similarly, promoting training and development programs focusing on supply chain management, customer service excellence, quality control, and brand management could enable SMEs to build internal capacities. Furthermore, policies encouraging partnerships and alliances among SMEs and larger firms could provide smaller firms access to resources and expertise they might not possess otherwise (Gomes-Casseres, 1996).

Regulatory measures can also significantly impact the competitiveness of SMEs in the semiconductor industry. Policymakers should strive for a balance where regulations safeguard the interests of stakeholders without hampering the growth and innovation capabilities of SMEs. This could involve streamlined procedures for business establishment, intellectual property protection measures that encourage innovation, and regulations that ensure a level playing field in the industry.

By creating an environment conducive to growth and competition, such policy measures can help foster a vibrant, innovative, and competitive semiconductor industry. They can aid in increasing the industry's overall productivity, fostering innovation, and enhancing the global competitiveness of the nation's semiconductor industry.

4.5.4 Implications for Future Research

The findings of this research open avenues for future research. Specifically, scholars could delve deeper into the mechanisms SMEs can use to improve delivery time and after-sales service. In addition, research could explore how SMEs can develop their brand reputation in the competitive semiconductor industry. Further, the role of digital technologies in enhancing SME competitiveness in this industry deserves more scholarly attention.

Based on our findings, we recommend that SMEs in the semiconductor industry:

1. Prioritize investments in logistics and customer service to improve delivery times and after-sales service. Firms may consider leveraging digital technologies to achieve these goals (Bharadwaj et al., 2013).

2. Focus on quality assurance and develop communication strategies that highlight their commitment to quality. This effort could enhance their brand reputation and attract customers who prioritize quality over price (Aaker, 2010).

3. Seek governmental support programs designed to help SMEs improve their competitive stance in the industry.

5. Conclusion

The study utilized a quantitative approach, administering a questionnaire to a cohort of industry professionals, which generated data that was both rich and nuanced. The results unveiled a tapestry of factors that significantly impact the purchasing decisions within the semiconductor industry. Importantly, the study illuminated the paramount importance placed on delivery time, after-sales service, product quality, and brand reputation in the decision-making process (Vargo & Lusch, 2008; Aaker, 1996).

Similarly, the significance of after-sales service echoes the "service-dominant logic" concept proposed by Vargo and Lusch (2008). The increasing emphasis on extending value propositions beyond the product calls for firms to invest in improving their customer service and nurturing customer relationships.

The survey results also highlighted the importance of product quality and brand reputation in driving customer decisions. This underlines the need for firms to invest in quality assurance and effective branding strategies. Firms need to consistently communicate their values, achievements, and commitments to stakeholders to enhance brand reputation and create a distinct identity in the market (Aaker, 1996).

Nevertheless, the research identified a surprising level of volatility in the market, with a high proportion of respondents expressing a readiness to switch suppliers. This finding

presents a unique challenge for the industry, hinting at a relative lack of differentiation among suppliers and potential customer loyalty issues.

This research has made significant contributions to the literature in several ways. First, it corroborates and expands upon the seminal work of Christopher (2016) and Vargo and Lusch (2008), emphasizing the crucial role of delivery time and after-sales service in shaping the decision-making process for semiconductor product purchasers. While these two factors have been highlighted previously in general marketing and supply chain management studies (Christopher, 2016; Vargo & Lusch, 2008), this research contributes to the existing literature by establishing their critical role specifically within the semiconductor industry.

Furthermore, the research illuminates the dynamic and competitive landscape of the semiconductor industry, confirming the observations of Porter (2008) on the inherently competitive nature of high-tech industries. It also adds to the literature by exposing a willingness among customers to switch suppliers, underscoring the critical need for differentiation and customer loyalty in this volatile market. This finding resonates with the assertions of Oliver (1999) regarding the volatility of customer loyalty in highly competitive markets.

Moreover, the research contributes a nuanced understanding of the decision-making process in the semiconductor industry. It substantiates the findings of Kotler and Keller (2016) that multiple factors influence customer choice, and it provides a specific, prioritized list of influential factors in the semiconductor sector. This adds depth and context to the generic marketing theories, presenting an invaluable guide for future studies focused on this industry.

In essence, this research bridges the gap between broad marketing theories and the specific context of the semiconductor industry, enriching the literature while also providing practical guidance for industry participants.

Firstly, the study utilized a survey technique which, despite being efficient in collecting broad-ranging data, falls short of grasping the intricate subtleties of participant reactions (Fowler, 2013). Upcoming investigations could make use of qualitative methodologies, like interviews or focus groups, to garner deeper comprehension of the decision-making procedures of customers. This strategy could potentially yield a more complex understanding of the elements driving customer choices and convey a more detailed portrayal of the

competitive interplay in the semiconductor sector.

In addition, the time-based boundaries of this investigation pose another limitation. As the semiconductor industry is a component of the swiftly advancing high-tech sector, the elements affecting customer choices could fluctuate in response to technological progressions, market tendencies, or alterations in regulations (Tidd & Bessant, 2013). Consequently, the research findings should be viewed within the timeframe during which the data were gathered. Future studies should ponder upon the idea of examining the temporal evolution of these factors.

The limitations outlined provide several directions for future research. Subsequent studies could use a multi-case study design or employ mixed methods to further validate and expand upon the findings of this study. Exploring the perspective of suppliers could also provide additional insights. Moreover, longitudinal studies could be beneficial to understand the evolving dynamics of the semiconductor industry.

In the end, this investigation acts as a preliminary foray into the crucial elements that sway customer decision-making within the semiconductor sector. It paves the way for more detailed and comprehensive inquiries that could further augment our comprehension of this intricate and fast-paced industry.

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Annexes:

Annexes A: Questionnaire

How often do you purchase products from semiconductor companies?↵
A. Daily↵
B. Weekly↵
C. Monthly↵
D. Rarely↵
E. Never↵
↵
How important is quality in your decision-making process when purchasing semiconductor products?↵
A. Extremely important↵
B. Very important↵
C. Somewhat important↵
D. Not very important↵
E. Not at all important↵
↵
How important is price in your decision-making process when purchasing semiconductor products?↵
A. Extremely important↵
B. Very important↵
C. Somewhat important↵
D. Not very important↵
E. Not at all important↵
↵
How important is delivery time in your decision-making process when purchasing semiconductor products?↵
A. Extremely important↵
B. Very important↵
C. Somewhat important↵
D. Not very important↵
E. Not at all important↵
↵
How important is after-sales service in your decision-making process when purchasing semiconductor products?↵
A. Extremely important↵
B. Very important↵
C. Somewhat important↵
D. Not very important↵
E. Not at all important↵
↵
How do you usually find out about new semiconductor products?↵
A. Through industry publications↵
B. Through trade shows and exhibitions↵
C. Through online search engines↵
D. Through recommendations from colleagues and peers↵

E. Other (please specify)↵

↵

How likely are you to switch to a new semiconductor product supplier?↵

A. Very likely↵

B. Somewhat likely↵

C. Neutral↵

D. Somewhat unlikely↵

E. Very unlikely↵

↵

How important is brand reputation in your decision-making process when purchasing semiconductor products?↵

A. Extremely important↵

B. Very important↵

C. Somewhat important↵

D. Not very important↵

E. Not at all important↵

↵

How often do you interact with your semiconductor product suppliers for updates or feedback?↵

A. Daily↵

B. Weekly↵

C. Monthly↵

D. Rarely↵

E. Never↵

↵

What factors influence your decision to choose one semiconductor supplier over another?↵

A. Quality of products↵

B. Price↵

C. Delivery time↵

D. After-sales service↵

E. Brand reputation↵

F. Other (please specify)↵

↵

How do you prefer to receive product information from semiconductor suppliers?↵

A. Through email newsletters or alerts↵

B. Through phone calls or personal contacts↵

C. Through online product catalogs or brochures↵

D. Through trade shows or exhibitions↵

E. Other (please specify)↵

↵

How satisfied are you with your current semiconductor product supplier?↵

A. Very satisfied↵

B. Somewhat satisfied↵

C. Neutral↵

D. Somewhat dissatisfied↵
E. Very dissatisfied↵
↵
How likely are you to recommend your current semiconductor product supplier to others?↵
A. Very likely↵
B. Somewhat likely↵
C. Neutral↵
D. Somewhat unlikely↵
E. Very unlikely↵
↵
How do you perceive the reliability and consistency of semiconductor products you have purchased in the past?↵
A. Very reliable and consistent↵
B. Somewhat reliable and consistent↵
C. Neutral↵
D. Somewhat unreliable and inconsistent↵
E. Very unreliable and inconsistent↵
↵
In terms of production costs, which of the following factors would most likely influence your decision to purchase semiconductor products from a particular supplier?↵
A. Lower production costs↵
B. Higher production efficiency↵
C. Faster turnaround time↵
D. Other (please specify)↵
↵