INSTITUTO
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3D Printing Technology - Strategies for market penetration and brand building: Commercial development plan for Company M

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MSc in Business Administration

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April, 2025

BUSINESS
SCHOOL

Department of Marketing, Operations and General Management

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Acknowledgements

As I finalize my thesis, I look back on this challenging and rewarding journey with gratitude. I would like to express my deepest gratitude to my mentors and teachers who have provided me with selfless help and invaluable guidance along my academic path.

First of all, I would like to express my special thanks to my supervisor, Prof. Nuno Alexandre Teixeira. During the construction process of the thesis, you have tirelessly provided insightful guidance, from the macro framework to the micro words and phrases, every detail has been poured into your heart and soul. Your foresight pointed out the direction of my research and allowed me to find my own lighthouse in the vast academic ocean. In particular, you provided valuable advice on the overall framework of the dissertation and the writing requirements of the dissertation, and patiently guided me how to critically analyze existing studies, which laid a solid theoretical foundation for my dissertation. You have always given me clear and precise guidance with great patience and enthusiasm. I am deeply touched by your attentive guidance and selfless dedication, which also inspire me to keep pursuing excellence.

I would also like to express my sincere gratitude to Mr. Shi Wei. You have given me crucial technical help in the key link of data analysis. In the face of complex data and complicated analysis process, you always answered my questions patiently and helped me overcome one technical problem after another. Your professional knowledge and rigorous attitude have greatly benefited me and made me believe more strongly in the importance of data analysis in academic research.

In addition, I would like to express my special thanks to Prof. Sofia. In the process of writing the thesis, you provided me with invaluable guidelines, which enabled me to have a deeper understanding of the thesis structure, logical expression, and academic norms. Your guidance not only helped me avoid many potential mistakes, but also taught me how to better present my research results to readers. Your teachings are like the light of a lighthouse, illuminating my path forward.

I would also like to thank all the teachers who educated me during my study in Portugal, it is your hard work and selfless dedication that created a good academic atmosphere for us. I would also like to thank my classmates for your companionship and support so that I am not alone in my academic journey.

Last but not least, I would like to thank my family for your silent dedication and selfless devotion, which enabled me to devote myself to my studies and research. No matter how difficult and challenging I encounter, you are always my most solid support.

In conclusion, this thesis could not be completed without the care and support of many teachers, classmates and family members. Here, I would like to express my most sincere thanks again to all those who have given me help and support! In the future, I will continue to project hard and forge ahead to return your care and love with even better results.

Resumo

Com a popularização da tecnologia de impressão 3D, a empresa líder do sector, Company M, lançou várias novas impressoras 3D, mas ainda precisa de lidar com os desafios da expansão da quota de mercado e do reforço da influência da marca. Dada a diversidade das necessidades dos utilizadores e a força dos seus concorrentes, a Empresa M irá adotar uma série de estratégias precisas e inovadoras em torno da aquisição de clientes, retenção de clientes e construção da marca. Isto inclui a implementação de estratégias de marketing personalizadas, a otimização dos sistemas de preços e das atividades promocionais e de vendas, ao mesmo tempo que se expandem ativamente os canais de vendas online e offline para construir uma rede de vendas abrangente. Para adquirir e reter clientes de forma mais eficaz, a Empresa M dará especial ênfase à experiência e interação do utilizador e aumentará os seus esforços no marketing boca-a-boca e no desenvolvimento de vendas. Além disso, a empresa M trabalhará na construção da marca para aumentar a fidelidade dos clientes através do reforço da sua imagem de marca. Este projeto utiliza de forma abrangente a pesquisa bibliográfica, os inquéritos por questionário, a análise quantitativa e outros métodos para analisar profundamente o ambiente atual do mercado e as necessidades dos utilizadores, e desenvolve estratégias de marketing orientadas em conformidade. Estas estratégias integram a análise da situação externa, a análise da situação interna, a análise SWOT e a segmentação do mercado, com o objetivo de ajudar a empresa M a destacar-se na feroz concorrência do mercado, a alcançar um crescimento significativo das vendas, a expandir significativamente a quota de mercado e a consolidar a sua posição de liderança na indústria da impressão 3D, bem como a melhorar eficazmente as capacidades de aquisição e retenção de clientes e a aprofundar a construção da marca.

Palavras-Chave: Impressão 3D, Desenvolvimento de Vendas, Marca, Análise de Clusters, Aquisição e retenção de clientes

JEL Classification: M31 - Estratégia de Marketing; M10 - Administração de Empresas Geral

Abstract

With the popularization of 3D printing technology, industry leader Company M has launched several new 3D printers, but still needs to deal with the challenges of expanding market share and enhancing brand influence. Given the diversity of user needs and the strength of its competitors, Company M will adopt a series of precise and innovative strategies around customer acquisition, customer retention and brand building. This includes implementing personalized marketing strategies, optimizing pricing systems and sales & promotional activities, while actively expanding online and offline sales channels to build a comprehensive sales network. In order to acquire and retain customers more effectively, Company M will place special emphasis on user experience and interaction, and increase its efforts in word-of-mouth marketing and sales development. In addition, Company M will work on brand building to enhance customer loyalty by strengthening its brand image. This project makes comprehensive use of literature research, questionnaire surveys, quantitative analysis and other methods to deeply analyze the current market environment and user needs, and develops targeted marketing strategies accordingly. These strategies integrate external situation analysis, internal situation analysis, SWOT analysis and market segmentation, aiming to help Company M stand out in the fierce market competition, achieve significant sales growth, significantly expand market share and consolidate its leading position in the 3D printing industry, as well as effectively enhance customer acquisition and retention capabilities and deepen brand building.

Keywords: 3D Printing, Sales Development, Brand, Cluster Analysis, Customer acquisition and retention

JEL Classification: M31 - Marketing Strategy; M10 - Business Administration General

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Glossary

JD: Jingdong is China's leading integrated e-commerce platform, offering genuine product guarantee and fast logistics services.

KOL：Key Opinion Leader

PDD: PinDuoDuo,An e-commerce platform centred on social e-commerce, offering cost-effective goods and services through group buying, bargaining and other interactive methods, was born in 2015

TB: TaoBao: Online retail platform of Alibaba. Huge user base.

WeChat Channel: The content platform of Tencent in WeChat.

XiaoHongShu: Lifestyle platform using machine learning.

1. Introduction

With the continuous maturity and popularization of 3D printing technology, its application in many fields such as industrial design, medical, construction, education and so on is becoming more and more widespread, showing great market potential and social value. As a leading company in the field of 3D printing technology, M Company has successfully launched a number of new 3D printers by virtue of its continuous technological innovation and high-quality product quality, which have received widespread attention in the market. However, in the fierce market competition, Company M is also facing the challenge of increasing its market share and enhancing its brand influence.

Currently, the diversification of user needs and the strong performance of competitors mak e it necessary for Company M to have a deeper understanding of the market environment an d user needs, and to formulate more precise and effective marketing strategies. Therefore, th is project aims to analyse the market environment and user needs of Company M's new 3D p rinters in depth, and put forward targeted marketing strategies to help Company M better sati sfy user needs, increase market share and brand influence, and achieve sustainable develop ment.

The main objectives of this project is to solve the specific problems faced by Company M in marketing by analyzing the current marketing situation of its new 3D printer, including but not limited to the following aspects:

1) Accurately locating the target market: project how to accurately locate the target market and clarify the target user group according to the product characteristics and market demand, so as to provide a basis for the subsequent development of marketing strategies.

2) Formulate reasonable pricing and promotion strategies: Explore how to formulate reasonable pricing strategies based on product costs, market demand and competitors, and formulate effective promotion strategies to increase product sales in conjunction with market demand and holidays and other occasions.

3) Expanding sales channels and building an efficient sales network: analyze the advantages and shortcomings of the current sales channels, project how to expand new sales channels, build a more efficient sales network, and improve the market coverage of the product.

4) Shaping Brand Image and Enhancing the Effect of Word-of-Mouth Marketing: Explore how to shape the brand image of Company M through advertising and brand cooperation, and enhance the user's word-of-mouth and realize the effect of word-of-mouth marketing by providing high-quality products and services.

This project analyses the current market environment and user needs in depth through literature research, questionnaire survey, quantitative analysis and other methods. Through

in-depth research and analysis, targeted marketing strategies are proposed to help Company M stand out in the fierce market competition and realize sales growth and market share expansion.

The main body of this thesis is divided into five chapters, which are described below.

Chapter 1: Introduction

It mainly introduces the background and significance of the study, emphasizes the wide application of 3D printing technology and M's leading position in the field, and points out the challenges faced by M in enhancing its market share and brand influence. Subsequently, the purpose of the study and the problems to be solved are clarified, including accurate positioning of the target market, formulation of reasonable pricing and promotion strategies, expansion of sales channels and construction of an efficient sales network, as well as shaping the brand image and enhancing the effectiveness of word-of-mouth marketing. Finally, the basic framework and arrangement of the thesis are briefly outlined.

Chapter 2: Literature Review

This chapter outlines the domestic and international research status, application fields and market potential of 3D printing technology, pointing out that 3D printing technology is developing rapidly, the market scale is expanding, and it is widely used in industry, medical treatment, education and other fields. Meanwhile, the basic theoretical research, printing process and material technology innovation of 3D printing technology, as well as the theoretical foundation of STP and 4P marketing strategy theory are reviewed. In addition, the application of 3D printing technology in the market and the importance of brand building and customer acquisition and retention are analyzed.

Chapter 3: Research Methodology

This chapter describes in detail the methodology adopted in the research process, including diversified research methods such as literature review, interview, questionnaire survey, and quantitative analysis, aiming at a comprehensive and in-depth understanding of the market environment and users' needs, and providing scientific data support and decision-making basis for the formulation of Company M's 3D Printer marketing strategy.

Chapter 4: Commercial Development Plan

It mainly describes the business development plan of Company M. The content begins with a PESTEL analysis to assess its impact on the 3D printing industry. This is followed by an industry analysis including market value and growth rate, regional sales, competitor analysis and market-specific information. By comparing Company M's performance with that of its competitors in terms of history, product range, market segments, positioning, skills and management, retail/distribution strategy, communication strategy, sales and market share, Company M's market position is clarified - ‘Cost-effective and universal 3D printing solution

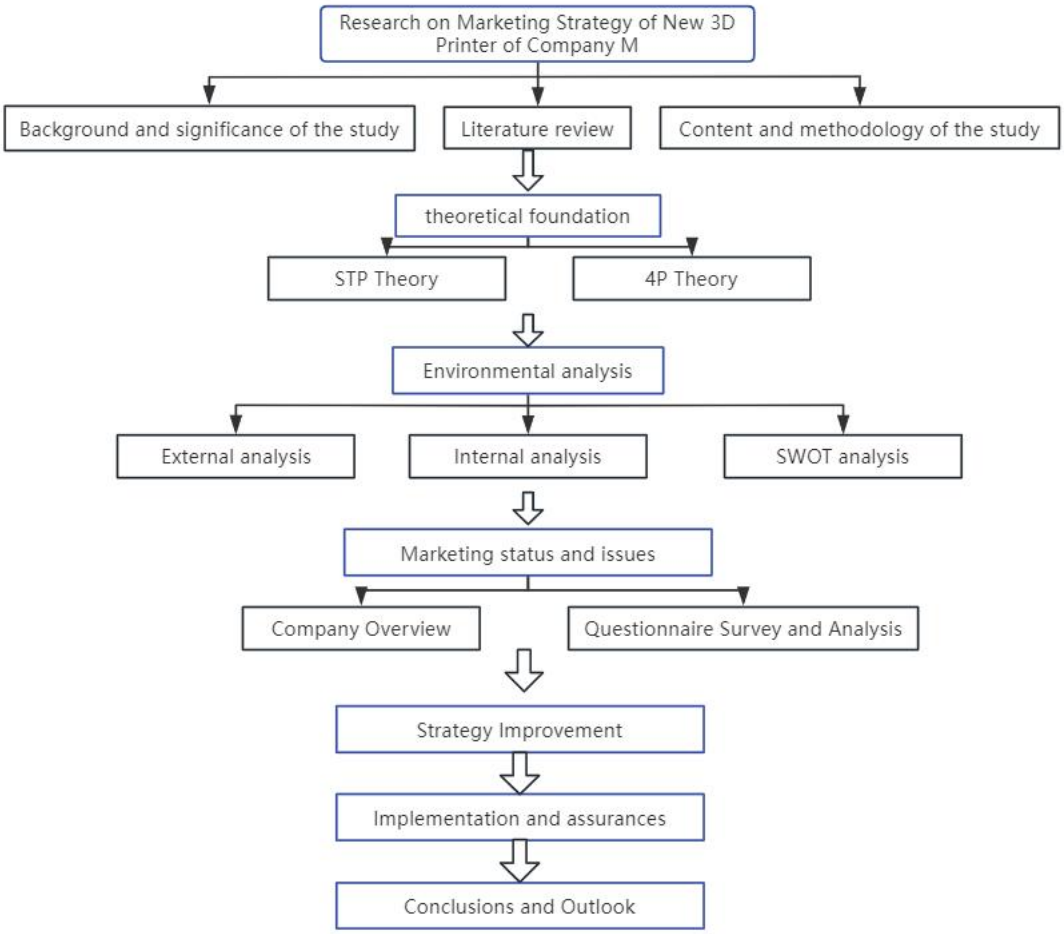
provider'. Finally, the marketing mix strategy of Company M was formulated, including emphasis on product value, pricing strategy, promotion and customized services, and short-term and long-term marketing objectives were set.

Chapter 5: Research Conclusion and Future Outlook

The previous sections are summarized and outlined, conclusions of the research are drawn, the shortcomings of this thesis are explained, and an outlook on the 3D printer market is provided.

The thesis will be organized according to the following structure:

Figure 1.1 Technical Route



Source: Author (2025)

2. Literature Review

2.1. Marketing Research on 3D Printers

2.1.1 Introduction to 3D Printing

In recent years, with the rapid development and innovation of technology, 3D printing technology has become a hot spot for research worldwide. Foreign scholars have conducted extensive and in-depth research in many areas of 3D printing technology, especially in its application, performance improvement, material innovation and other aspects have made significant progress. The following is a literature review of the current status of foreign 3D printer research.

First, regarding basic research and applications of 3D printing technology, according to Li et al. (2023) , published in the EuroMed Journal of Business examines the use of 3D printing technology and consumer satisfaction in the B2C e-tail market. The project reveals the potential of 3D printing technology for customized products and services and how consumer satisfaction can be enhanced through this technology. In addition,according to Miao et al. (2022) Asia Pacific Journal of Marketing and Logistics further explores the impact of e-customer satisfaction, e-trust and perceived value on consumer repurchase intentions in e-commerce environments, which also involves the use of 3D printing technology in the e-commerce sector .

Secondly, scholars have also conducted a lot of research on the performance improvement and material innovation of 3D printing technology. For example, JI Ping and Liu (2021) discussed the current development of desktop-level plastic 3D printers in Science and Technology Information, with a special focus on their progress in performance enhancement and material selection. Tong and He (2021) concluded the design of FDM (fused deposition modeling) 3D printer print heads, which is important for improving printing accuracy and efficiency, in Manufacturing Technology and Machine Tools. Bai and Lu (2021) said in the Journal of Inner Mongolia Medical University, on the other hand, focuses on the application of 3D printing technology in the practice of medical education, especially on the progress of biomedical modeling and medical device development.

In addition, foreign scholars have focused on the application of 3D printing technology in different industries. For example, Miao (2021) proposed a rapid design system for ship parts based on 3D printing technology in Ship Science and Technology, which provides a new solution for the rapid development of ship manufacturing industry. Zhao et al. (2021) summarized the development status of 3D printing technology and equipment in Mechanical Research and Application, and explored the prospects of its application in many industries.

In summary, foreign research in 3D printing technology shows a diversified and in-depth trend. From basic research and application exploration, to performance improvement and material innovation, to cross-industry application expansion, foreign scholars have achieved remarkable results in many aspects of 3D printing technology. These researches not only promote the rapid development of 3D printing technology, but also provide strong support for the technological progress and application innovation of related industries.

3D printing, also known as Additive Manufacturing (AM), is a technique for building three-dimensional physical objects by adding material layer by layer. The technology originated in the 1980s and has continued to evolve and improve as it has become widely used today in a variety of fields, including industry, healthcare, education, construction, and consumer products.

3D printing basically works by creating a three-dimensional model through computer-aided design (CAD) software, converting that model into a series of slices or layers, and then printing those slices layer by layer on a specific 3D printer, which ultimately builds up into a complete physical object. (Lu & Lee, 2013) argued that different 3D printing technologies use different materials and printing methods, mentioning Fused Deposition Modeling (FDM), Stereo-lithography (SLA), Digital Light Processing (DLP), and so on. In industrial applications, 3D printing technology is favoured for its ability to manufacture complex parts quickly and flexibly. For example, Zhou et al. (2023) states that 3D printing can also be used for rapid prototyping and customized production to meet the market demand for personalized products. In addition, Shi et al. (2024) argued that 3D printing can be used to create molds and parts with complex internal structures to improve product design and reduce manufacturing costs.

3D printing technology also shows great potential in consumer applications.According to Chen et al. (2024), Consumers can use 3D printers to create a variety of personalized products such as toys, accessories, and home furnishings. In addition, According to Bei (2022), with the popularization of 3D printing technology and the reduction of cost, more and more consumers are using 3D printing technology to repair damaged items or make unique gifts .

3D printing technology, as an innovative production method, is changing the way we work and live. Whether in the industrial or consumer field, 3D printing technology shows a wide range of application prospects and great market potential.

2.1.2 Status and development trend of domestic 3D printing market

In recent years, the 3D printing market has shown rapid growth. According to statistics, the global 3D printing products and services market will be about $15.4 billion in 2022, and it is

expected that the growth rate of the global 3D printing market will reach the highest 23.7% in 2023-2025, and the market size will be more than $37 billion by 2026. Meanwhile, China's 3D printing market is also growing steadily, with the market size reaching 32 billion dollars in 2022 and expected to reach 110.19 billion dollars in 2026. In terms of industry chain, the 3D printing industry has formed a relatively perfect industry chain, including the upstream 3D printing equipment.

Including upstream 3D printing equipment and material suppliers, midstream 3D printing service providers, and downstream end-use industries. Li (2018) concluded that 3D printing technology is a new force to promote the future development of science and technology, which can be achieved through the development of a 3D printing cloud manufacturing platform, the integration of various offline 3D printing equipment distributed in different locations, and the use of the advantages of 3D printing technology to promote the networking, personalization, and customization of the 3D printing industry. In addition, with the continuous progress of technology and the expansion of application fields, the competitive landscape of the 3D printing industry is constantly changing.

In terms of light-cured 3D printing technology, Ulan and Wu (2022) conducted process analysis and performance testing based on DLP light-cured 3D printing technology, which further promoted the development of light-cured 3D printing technology. Chen et al. (2024) investigated the critical energy and curing depth influencing factors of photosensitive resin for light-curing 3D printing, which provided a theoretical basis for optimizing the light-curing 3D printing process.

In terms of FDM (fused deposition molding) 3D printing technology, domestic scholars have also conducted a lot of research. For example, Huang (2022) conducted an in-depth project on the mechanical structure design of 3D printers based on FDM process, which provides an important reference for improving the stability and printing accuracy of FDM 3D printers. In addition, Chen et al. (2024) explored the digital manufacturing of mathematical models based on FDM 3D printers, which provides a new way for the rapid manufacturing of complex parts. Shih et al. (2024), on the other hand, explored the 3D printing production of hand puppets based on the FDM process, demonstrating the potential of the application of FDM technology in the cultural and creative industries.

In the application of 3D printing technology, domestic scholars have also achieved remarkable results. For example, Zhou et al. (2023) reviewed 3D printing technology in aerospace manufacturing, showing the broad application prospect of 3D printing technology in aerospace field. Li (2022) concluded that the application of 3D printing technology in the mechanical industry, which provides new ideas for the transformation and upgrading of the traditional mechanical manufacturing industry. In the field of medical education, the research

of Bai and Lu (2021) shows that 3D printing technology has an important value in the practical application of medical education.

With the rapid progress of science and technology, 3D printing industry is ushering in significant industry trends. Technological innovation is the core driving force that keeps the industry moving forward, as new printing materials, processes and equipment continue to emerge, dedicated to improving the precision, speed and efficiency of printing, while reducing costs and expanding application areas. Industrial upgrading provides a broad space for the application of 3D printing technology in high-end manufacturing fields such as aerospace and automotive. Personalized customization has become an important means to meet the diversified needs of the market, indicating that 3D printing will pay more attention to the consumer experience in the future. In addition, the development mode of cross-border integration, such as the combination with the Internet, big data, artificial intelligence and other technologies, will further promote the intelligent development of the industry and inject new vitality into the innovation of the 3D printing industry. These trends together draw a grand blueprint for the future prosperity of the 3D printing industry.

2.1.3 Research on Consumer Use of 3D Printing

As 3D printing technology becomes more popular and less costly, more and more consumers are experimenting with 3D printing technology to create personalized products. 3D printing technology, as an innovative manufacturing method, has demonstrated its unique advantages in a number of areas. In recent years, there has been a gradual increase in the number of studies on consumers' use of 3D printing, which have examined consumers' motivations, behavioral patterns, and their impact on the market.

According to Chen et al. (2014), In terms of consumers' motivation to use 3D printing, studies have shown that consumers' demand for personalization and customization is one of the important factors driving their use of 3D printing technology. Through 3D printing technology, consumers can make products that meet their personalized needs and satisfy their pursuit of uniqueness. In addition, the project by Qiu and Hui (2015) also pointed out that 3D printing technology has a promising future in several fields, and consumers' curiosity and desire to explore new technologies are also one of the important motives for their use of 3D printing.

In terms of consumers' behavioral patterns in using 3D printing, studies have shown that consumers tend to go through a process of understanding, trying, and deeper use of 3D printing technology. Initially, Lu (2018) concluded that consumers may just try to use 3D printing out of curiosity or interest, but with the understanding and mastery of the technology,

they will gradually use it in depth, and even apply it as an innovative means in their life or work.

Regarding the impact of 3D printing on the market, the project points out that the popularization and application of 3D printing technology not only provides more choices and possibilities for consumers, but also brings market opportunities and challenges for enterprises. On the one hand, Chen (2017) concluded that consumers can make products that meet their needs through 3D printing technology, reducing their dependence on traditional manufacturers; on the other hand, enterprises need to continuously innovate and improve to adapt to the market changes brought by 3D printing technology .

In addition, it is worth noting that with the rise of the online economy, the way consumers use 3D printing has also changed. According to Xiao et al. (2018), in the era of network economy, consumers can obtain more 3D printing resources and information through online platforms, and they can also share their 3D printing works and experiences through online platforms, which further promotes the popularization and application of 3D printing technology.

In summary, the project of consumers' use of 3D printing provides an important reference for us to deeply understand consumer demand and market changes. In the future, with the continuous development and improvement of 3D printing technology, its application in the consumer market will be more extensive and in-depth.

2.1.4 International Research Status

Internationally, 3D printing technology has also received extensive attention and research. Europe and the United States are leading in the research and application of 3D printing technology, with a number of well-known enterprises and research institutions. These enterprises and institutions have achieved many important results in material research and development, equipment manufacturing, software development and other aspects, which have promoted the continuous progress and application expansion of 3D printing technology. At the same time, some international organizations also actively promote the development and application of 3D printing technology, such as the International Additive Manufacturing Alliance (ASTM) .

(1)Global 3D Printing Market Size

Given that 3D printing technology is not mature enough in terms of the diversity of printable products, cost and materials, it has yet to usher in large-scale commercial applications. However, it is undeniable that 3D printing will create a new round of industrial revolution benchmarking technology, the policy to promote the industry excited, and its

market size is expected to continue to refresh. Overall scale continues to grow. On April 2 this year, 3D Printing Technology Reference noted that Wohlers Associates, supported by ASTM International, released the Wohlers Report 2024. The entire additive manufacturing industry surpassed the $20 billion mark for the first time, reaching $20.035 billion in sales, an 11.1% increase year-over-year. Wohlers Associates, the authoritative global 3D industry research organization, summarized data from 117 3D printing service providers, 114 3D printer manufacturers, 29 third-party material developers, and 152 academic and research organizations, states in the Wohlers Report 2023 that the global 3D printing market reached $18 billion in 2022, an 18.3% increase compared to 2021. This is despite the fact that 3D printing's market share of billions to billions of dollars per year is slightly tiny compared to the tens or even hundreds of billions of dollars per year market size for 2D printing. According to Dominik et al. (2024), companies in the 3D printing industry are generally small, with even the two publicly traded 3D printer companies that dominate the market, globally, Stratasys and 3D Systems, posting 2011 revenues of only $170 million and $290 million. However, compared with the 2D printing industry, which has long entered the maturity period, the 3D printing industry is on the rise, and the rapid expansion of its market size has already signaled a huge potential. The global manufacturing industry chain from the initial processing of raw materials, equipment manufacturing until the final printing applications and services, even if only a small portion of consumer goods through 3D printing to manufacture, will be a trillion-dollar scale of the huge market.

(2) Rapidly expanding geographic scope

Since 2009, the 3D printing market has grown dramatically in North America and Europe. According to Stratasys' 2011 financial report, about 60% of its revenue comes from the European and American markets, and the U.S. “Time” magazine has listed 3D printing as “America's top ten fastest-growing industries”.

Catherine M. Jewell and James A. (2024) argued that the proportion of 3D printing manufacturing equipment in a certain degree shows the country's economic vitality and innovation, the United States owns 85% of the world's 3D printing equipment, the two 3D printer manufacturing giants Stratasys and 3D Systems are U.S. companies, and are listed on the NASDAQ and NYSE, respectively. The two 3D printer manufacturing giants, Stratasys and 3D Systems, are both US companies and are listed on NASDAQ and NYSE respectively. In recent years, developing countries are also increasingly aware of the need for innovation and transformation of the manufacturing industry, promoting the rapid development of new industrial technologies such as 3D printing. Gangwani and Bhatia (2024) concluded that with China as a representative, companies such as Beijing Lonhwa and Shaanxi Hengtong are

relying on universities in countries such as China, where personal 3D printers have been used in consumer electronics retail chains selling them as everyday items.

(3) The application field continues to extend

Favorable factors driving the rapid expansion of the 3D printing market are the widespread use of 3D technology in manufacturing, the reduction of printing costs, and the growth of applications in new markets.3D printers are currently classified into industrial and desktop types. Industrial type is subdivided into two parts, one is the prototype manufacturing, in order to quickly output some difficult to hand or mechanical tools to complete the three-dimensional model, and the second is the direct manufacturing of large-scale metal structural parts, which has been in the automotive, aviation and other industrial fields has been the first appearance. The price of industrial 3D printers ranges from $20,000 to a million dollars, which is relatively expensive. 3D printing in the field of industrial manufacturing at the same time, there is also a wide range of applications in the medical field. Wenfang et al. (2021) stated that suppliers have noticed the growing demand for 3D printers in the medical field and have begun to focus on product development in the medical field, as well as the development of advanced feedstocks for a variety of complex medical applications, such as transplantation surgery and tissue implant engineering.

The desktop class is mainly concerned with some mass consumer goods manufacturing sectors. Desktop-class 3D printers, represented by Makerbot in the United States, are designed to satisfy individual design and fabrication interests by printing small objects such as eyeglass frames, prototype houses, and toys for around $2,000. Currently, Orbaiz and Arce-Urriza (2024) argued that 3D printing services can be found in business districts across the U.S., and the first retail store specializing in the sale of 3D printer supplies was opened by MakerBot in Manhattan, New York, in September 2012, MakerBot MakerBot hopes to open 3D printing stores around the world in the next five years, so it is clear that 3D printers have begun to enter the consumer market and are gaining momentum.

2.2. Research on marketing theories

2.2.1 Marketing strategy

Marketing strategy is the marketing tactics adopted by an enterprise about selecting and occupying the target market according to its own internal conditions and external competitive conditions. Chan et al. (2010) concluded that an enterprise develops long-term, global and directional planning to achieve specific marketing objectives based on market trends, competitive environment and internal resource conditions.

It is an important part of an enterprise's overall strategy and is designed to help the enterprise achieve specific marketing objectives, such as increasing market share, improving brand awareness or promoting sales growth. Marketing strategy covers not only product or service positioning, pricing, promotion and distribution strategies, but also analysis of the target market, competitor assessment and long-term market planning.

According to Kotler and Kartajaya (2017), the use of marketing strategy is crucial for companies because it can provide clear directions and goals, help companies better understand and adapt to the market environment, optimize resource allocation, and enhance market competitiveness. Green et al. (2012) concluded that by formulating and implementing an effective marketing strategy, enterprises can stand out in the fierce market competition and form a unique competitive advantage. Long-term marketing strategies help enterprises to establish stable customer relationships and enhance brand loyalty, thus realizing sustainable development of enterprises. In the 3D printer market, due to the rapid iteration of technology and diversification of consumer demand, developing an effective marketing strategy is even more critical to business success.

Marketing strategy usually includes the following key components:

1) Market positioning and target market: companies need to identify the target user groups of 3D printers through market research and analysis, and understand their needs and preferences in order to develop targeted marketing strategies .

2) Marketing Mix Strategy: McCarthy (1960) proposed a four-pronged strategy of product, price, channel, and promotion. For 3D printer companies, the need for:

- Product: focus on the technological innovation, quality, and after-sales service of the product to meet the diversified needs of consumers.
- Price: formulate a reasonable price strategy according to market positioning, cost structure and competitive situation.
- Place: choose appropriate sales channels, such as online e-commerce platforms, offline physical stores, etc., to ensure that the products can efficiently reach the target market.
- Promotion: Increase brand awareness and reputation through advertising, public relations, social media and other channels to attract the attention of potential customers.

3) Brand building and promotion: Keller, K. L (1993) argued that building a strong brand is an important part of marketing strategy. Through branding, companies can differentiate their 3D printer products from competitors and establish a favorable brand image in the target market.

4) Customer Relationship Management: Establishing and maintaining good customer relationships is crucial to the long-term development of an organization. By providing quality

pre-sales and after-sales services, companies can build customer satisfaction and loyalty, increase customer stickiness, and promote repurchase and word-of-mouth communication.

5) Monitoring and Evaluation: Kotler (2017) concluded that after formulating a marketing strategy, companies need to regularly monitor and evaluate the effectiveness of the implementation of the strategy. By collecting and analyzing market feedback, sales data and customer feedback, companies can adjust and optimize their strategies in a timely manner to ensure the effectiveness and adaptability of their strategies.

2.2.2 STP Theory

In the 1990s, Kotler systematically put forward the STP theory, STP theory is an important theory in marketing, including market segmentation, target market selection and market positioning three steps.

1) Concept of STP theory

STP theory is a systematic market analysis method, which aims to help enterprises precisely identify market opportunities and formulate effective marketing strategies. Through market segmentation, an enterprise divides the overall market into a number of segments with similar

characteristics and needs; then, according to the enterprise's resources and capabilities, it chooses a suitable target market; finally, through market positioning, the enterprise shapes a unique brand image and value proposition in the target market to distinguish itself from its competitors.

2) Elements of STP theory

Market Segmentation: Market segmentation refers to the fact that enterprises divide the whole market into several consumer groups with similar characteristics, i.e. segments, according to the differences in consumers' needs, purchasing behaviors, and purchasing habits. Market segmentation can be carried out through a variety of factors such as geography, demographics, psychology, and behavior. For example, geographic segmentation can be divided by country, region, city, etc.; demographic segmentation can be divided by age, gender, income, occupation, etc.; psychological segmentation focuses on consumer values, interests, etc.; and behavioral segmentation is based on factors such as frequency of purchase and brand preference. Market segmentation helps companies to better understand the needs of consumers, discover unmet market opportunities, and provide a basis for developing marketing strategies.

Targeting: Target market selection refers to the fact that based on market segmentation, an enterprise chooses one or several market segments as the object of focused service

according to its own resources and capabilities. When choosing a target market, an enterprise needs to consider a number of factors such as market size, growth potential, degree of competition, its own resources and capabilities. Common target market strategies include non-differentiated market strategy (adopting a uniform marketing strategy for the whole market), differentiated market strategy (formulating different marketing strategies for different market segments) and focused market strategy (concentrating resources on one or a few market segments) .

Positioning: Positioning refers to an enterprise's efforts to create a unique brand image and value proposition for its products based on the competitive situation of similar products in the target market, in order to differentiate itself from its competitors. Positioning can be achieved by emphasizing the uniqueness of the product, meeting specific consumer needs, and differentiating from competitors. Market positioning aims to enable the enterprise to establish a unique brand image and value perception in the minds of target consumers, thus improving brand recognition and consumer loyalty.

STP theory emphasizes that enterprises in the development of marketing strategy, Kotler and Armstrong (2015) concluded that they should first segment the market, choose the target market suitable for their own development, and through accurate market positioning, clarify their competitive advantages and differentiation characteristics in the target market. In 3D printer marketing, STP theory also has important application value. Li (2022) argued that through market segmentation, enterprises can more accurately understand the needs and preferences of different users; through the selection of target markets, enterprises can focus their resources on meeting the needs of a specific market; and through market positioning, enterprises can clearly define their own competitive advantages and differentiation strategies, so as to stand out in the fierce market competition. The application of this theory is especially important in the B2C market. For example, Li et al. (2024) argued the importance of market segmentation and target market selection in their project of the customer acquisition strategies of large third-party sellers in the electronic B2C market. They point out that by gaining a deeper understanding of consumer needs and behaviors, companies can more accurately perform market segmentation and select target markets that match their own resources, thus improving marketing effectiveness.

Figure 2.1 STP Theory Structure Diagram



Source: Kotler (1956) .

2.2.3 4P Theory

The 4P theory was first proposed by Professor Jerome McCarthy of Michigan State University in the United States in 1960, and this theory was elaborated in his book Basic Marketing. The publication of this book marked the birth of the 4P's theory as an important theoretical framework in the field of marketing. According to McCarthy (1960), the 4P theory one of the core concepts in marketing and was gradually refined with the development of marketing mix theory.

Specifically, the 4P theory consists of a combination of four basic strategies, namely Product, Price, Place (sometimes called Distribution or Pathway) and Promotion. These four strategies constitute the core of an enterprise's marketing activities. Through the combination and application of these controllable factors, an enterprise can achieve a positive and dynamic response to the external market environment and thus reach its marketing objectives.

This contribution of Professor Jerome McCarthy not only laid the foundation of modern marketing theory, but also made marketing management an important part of company management, involving a wider range of areas than traditional sales. Since the introduction of the 4P theory, it has been regarded as the cornerstone of the marketing field and has had a profound impact on marketing practices worldwide.

(1) Product: Product is the core of what an enterprise provides to the market, including tangible products and intangible services. In the 4P theory, the product is not only an item that meets the basic needs of consumers, but also the embodiment of the enterprise's brand

value and market positioning. Product design, quality, functionality, packaging and after-sales service all directly affect consumers' purchasing decisions and brand loyalty. Enterprises need to win market competition through product differentiation, i.e., products should have unique features and selling points to distinguish them from competitors. For example, Apple's iPhone is not only a communication tool, but also a symbol of fashion and technology due to its innovative design, quality user experience and rich ecosystem. The market positioning of a product is closely related to the brand strategy. Enterprises need to formulate product strategies according to the needs and preferences of the target market, including product positioning, brand image, and product line planning. Through accurate market positioning, enterprises can more effectively communicate product value and attract target consumers.

(2) Price: Price is the standard of value exchange set by an enterprise for a product, which directly affects the market acceptance of the product and the profitability of the enterprise. When setting pricing strategies, enterprises need to consider a number of factors such as product costs, market demand, competitive conditions and consumers' willingness to pay. Enterprises can develop different pricing strategies according to different market positioning and target consumer groups. Common pricing strategies include cost-oriented pricing, demand-oriented pricing and competition-oriented pricing. In addition, companies can also use discounts and promotions to attract consumers and increase market share. Price is not only a reflection of the economic value of the product, but also an important part of the brand value. High-quality products can often support higher prices and enhance brand image and consumer loyalty. Therefore, companies need to ensure product quality on the premise of reasonable price strategy to maximize brand value.

(3) Place: Distribution refers to all the links and channels involved in the flow of products from producers to consumers. Enterprises need to choose appropriate distribution channels and methods according to the characteristics of the product and the target market. Common distribution channels include direct sales, agency, retail, e-commerce and so on. Enterprises need to establish an efficient and stable distribution network to ensure that products can reach target consumers smoothly. At the same time, companies also need to manage and optimize distribution channels to improve channel efficiency and reduce channel costs. For example, they need to improve the motivation and loyalty of distributors by strengthening communication and cooperation with them, and enhance the consumer buying experience by optimizing logistics, distribution and after-sales service. In the context of globalization, enterprises also need to consider the issue of cross-border distribution. This involves factors such as laws and regulations, market environment, and cultural differences in different countries and regions. Therefore, enterprises need to formulate globalized distribution

strategies to adapt to the needs and challenges of different markets.enterprises through distributors to establish a link between the enterprise and the customer, the enterprise should focus on the development of excellent dealers, the establishment of dealer network. In this regard, Kotabe and Helsen (2014) concluded that a strategic perspective provides insights into how distribution strategies can be effectively utilized in the global marketplace in order to strengthen the connection between companies and consumers. .

(4) Promotion: Promotions are a series of marketing communication activities undertaken by companies to promote product sales. These activities are designed to increase the visibility and reputation of the product and to stimulate consumers' desire to buy and purchasing behavior. Common promotional tools include advertising, public relations, sales promotion, personnel marketing and so on. In the promotional process, companies need to comprehensively utilize a variety of means of communication to form the effect of integrated marketing communication. Through the integration of advertising, public relations, sales promotion and other means, enterprises can more comprehensively and effectively convey product information and brand value, and improve the promotional effect. With the strengthening of the trend of diversification and personalization of consumer demand, enterprises need to continue to innovate and personalize the promotion process. For example, they can establish closer ties and interactions with consumers through new marketing tools such as social media marketing and content marketing, and meet consumers' individual needs through customized products and services.In the B2C market, the 4P theory is especially widely used. For example, Miao et al. (2022) argued the importance of product (including product quality, product innovation, and product variety) in attracting and retaining consumers when projecting the effects of e-customer satisfaction, e-trust, and perceived value on consumer repurchase intentions in the B2C e-commerce sector. In addition, pricing strategy, choice of distribution channel, and design of promotional activities are all key factors influencing the effectiveness of B2C marketing.

It is important to note that the application of the 4P theory needs to be based on the results of the STP theory in order to be effective.The 4P theory provides an effective marketing framework from a firm's point of view.

Table 2.1 4P Marketing Theory Framework

	Essential factor	Main elements included
4P	Product	Functionality, Appearance & Packaging, Service category, After-sales level
	Price	Payment terms and discounts, customer-recognized value, value for money
	Place	Geography, speed of delivery, channel selection, scope of distribution
	Promotion	Indirect promotion by advertising, direct promotion by personnel, event marketing, trade fairs

Source: Jerome McCarthy (1960)

2.3. Application of marketing theory in the field of 3D printers

With the rapid development of 3D printing technology, marketing theory plays an integral role in promoting product innovation, market expansion and brand building in this field. Ivo Kothman and Niels Faber (2016) mentioned in How 3D printing technology changes the rules of the game, we can draw on the basic principles of marketing and apply them to the practice in the field of 3D printers.

First, market segmentation and target market selection in marketing theory are crucial for 3D printer manufacturers. Due to the wide range of applications of 3D printing technology, there are different demands for 3D printers from industrial design, medical field to education field and so on. Therefore, manufacturers need to segment the market according to market demand and select specific target markets for deep plowing. For example, for the education field, 3D printers that are easy to operate and affordable can be designed to meet the needs of schools and student groups.

Secondly, the product differentiation strategy in marketing theory is also applicable in the field of 3D printers. In the competitive market, manufacturers need to make their products stand out from many competitors through technological innovation, function improvement, and appearance design. For example: Hu et al. (2022) concluded that in the ice pier reverse modelling and 3D printing practical teaching applications, through a unique teaching application case, demonstrates the differentiation advantages of 3D printers in the field of education.

In addition, branding in marketing theory is an aspect that 3D printer manufacturers need to pay attention to. Branding is the consumer's perception and trust of the product, and is crucial to establishing a long-term competitive advantage in the market. 3D printer manufacturers need to continuously improve brand awareness and reputation through quality products, perfect service and effective marketing strategies. For example, by sponsoring science and technology competitions and organizing technical seminars to enhance the brand's influence in the field of science and technology.

Finally, the promotion strategy in marketing theory also has practical application value in the field of 3D printers. Manufacturers can increase the exposure and attractiveness of their products through advertising, promotion, public relations and other means. For example, using social media platforms for product promotion, attracting potential customers by organizing online and offline activities, and expanding sales channels through partnerships.

In summary, the application of marketing theory in the field of 3D printers is broad and practical. By using marketing tools such as market segmentation, product differentiation, brand building and promotion strategies, 3D printer manufacturers can better meet market demand, enhance competitiveness and achieve sustainable development.

2.4. Consumer Behavior

2.4.1 Consumer behaviour

Hawkins et al. (2017) argued that Consumer behavior, an intricate field, profoundly depicts the psychological ripples, emotional ups and downs, social interactions and personal experiences of individuals or groups in the whole process of pursuing and consuming goods, services, ideas and even experiences. This process begins with meticulous information search and careful comparison and evaluation before purchase, runs through the subtle moment of decision-making, until the actual transaction is concluded, and further extends to the satisfaction assessment after use, and even contributes to the willingness to repurchase in the future and word-of-mouth dissemination, forming a complete closed-loop. Solomon (2014) states that multi-dimensional, deep-level consumer behavior, not existing in isolation, but deeply influenced by multiple factors, is the most important factor of consumer behavior. does not exist in isolation, but is deeply influenced by the intertwining of multiple factors. Individual factors, such as age, gender, income level, education, and values, form the inherent bedrock of behavioral differences. Meanwhile, Engel and Miniard (2005) argued that psychological factors, including motivational drives, perceived biases, attitudinal tendencies, and learning effects, invariably guide consumers' decision-making paths. In addition, Schiffman and Kanuk (2007) argued that the embedded of social factors cannot be ignored as well, with the influence of cultural background, social class, family environment, and reference groups adding a social filter to consumer choices . Finally, Hawkins and Coney (2010) stated that environmental factors, especially technological innovations, economic fluctuations, changes in legal frameworks and political orientations, shape the external environment of consumer behavior at the macro level.In exploring the consumer behaviour of 3D printers, there has been a significant amount of research focusing on the purchase decision process, influencing factors, and subsequent use behaviour of consumers. Among them, Smith et al. (2018) argued that consumers' purchase decisions for 3D printers are influenced by several factors, including product performance, price, brand reputation, and personal interests and needs. According to Jones (2019), who noted through an extensive consumer survey that product ease of use and quality of after-sales service are equally important to consumer purchase decisions.

Specifically, consumers typically engage in extensive information gathering before purchasing a 3D printer, including online searches, reading product reviews, and consulting professionals. Brown's (2020) concluded that this behavioral pattern in the study, where he found through a questionnaire that more than 80% of consumers refer to at least three different sources of information before making a purchase.

Consumer behaviour patterns also show diversity during use. For example, some consumers tend to explore the various functions of the device and make innovative designs, while others are more focused on the stability and reliability of the device. In this regard, Thompson (2022) argued that a classification framework for consumer usage behaviour, categorizing consumers into different types such as exploratory, practical and conservative.

The importance of studying consumer behaviour lies in the fact that it provides companies with key insights into market needs, improve marketing strategies, promotes product innovation, strengthens customer relationships, and achieves sustainable growth. By understanding the psychological, emotional, social and personal processes of consumers, companies can more accurately identify their target markets and develop product and service strategies that meet consumer expectations. This helps companies to stand out in a competitive market environment, meet diverse consumer needs, and increase brand loyalty and market share. At the same time, studying consumer behaviour can also help enterprises predict market trends and adjust their business strategies in time to meet the challenges brought by market changes. In short, studying consumer behaviour is an important cornerstone for enterprises to achieve market success and enhance competitiveness.

In the purchasing decision process, consumers weigh various factors, such as printing accuracy, printing speed, material compatibility, and equipment cost. In addition, word-of-mouth communication on social media has a significant impact on consumers' purchasing decisions. According to Williams (2021), consumer reviews and feedback on products have become one of the most important factors influencing purchase decisions.

The consumer decision-making process usually consists of five stages:

1) Problem identification: Consumers become aware of the existence of a need or problem, such as the need to purchase a 3D printer for personal interest or work.

2) Information Search: Consumers gather information about a product or service through multiple channels (e.g., the Internet, social media, friend recommendations, etc.) .

3) Option Evaluation: Consumers compare and evaluate different options based on the information collected, taking into account various factors such as price, performance, brand, and reputation.

4) Purchase decision: After comprehensive weighing, consumers make a purchase decision and may be influenced by factors such as promotions and limited time offers.

5) Post-purchase behaviour: After purchase, consumers use and evaluate the product and decide whether to buy again or recommend it to others based on satisfaction.

2.4.2 Consumer Behaviour in the 3D Printing Industry

Consumer behaviour in the 3D printing industry exhibits some unique characteristics and trends: Technology acceptance and pursuit of innovation: 3D printing technology is an emerging technology, and its consumers tend to have high technology acceptance and pursuit of innovation. They are willing to try out new technologies and expect to realize diverse needs such as personification, prototyping and artistic creation through 3D printing.

Technology Acceptance and Pursuit of Innovation: Claussen and Halbinger (2021) argued that consumers of 3D printing technology, as an emerging technology, tend to have a high level of technology acceptance and pursuit of innovation. They are willing to try new technologies and expect 3D printing to fulfill diverse needs such as personalization, prototyping, and artistic creation.

Information Acquisition and Sharing: according to Adekunle and AnuarNur (2024), due to the complexity and specialization of 3D printing technology, consumers are more reliant on the Internet, professional forums, social media and other channels to acquire information and exchange experiences. At the same time, they are also happy to share their own experience of using the technology and displaying their works, forming an active community atmosphere.

Performance vs. Cost Tradeoff: according to Orbaiz and Arce-Urriza (2024), When choosing a 3D printer, consumers will consider the performance (e.g., printing accuracy, speed, material compatibility, etc.) and the cost (including the price of the device, the cost of consumables, and the cost of maintenance, etc.) in order to find the most cost-effective solution.

Learning and growing 3D printing technology has a certain learning curve, and consumers need to keep learning and practicing in the process of using it. Therefore, they tend to choose brands and products that provide good after-sales service, rich teaching resources and active user communities.

Environmental protection and sustainability: With the increasing awareness of environmental protection, consumers are increasingly concerned about the environmental friendliness and recyclability of 3D printing materials. This prompts companies to continuously develop more environmentally friendly printing materials and technologies to meet consumer demand.

To sum up, consumer behavior in the 3D printing industry presents the characteristics of technology orientation, information intensity, cost sensitivity, learning and growth, and environmental concern. An in-depth understanding of these characteristics is important for companies to develop effective marketing strategies, product development and customer relationship management in the 3D printing market.

2.5. Customer acquisition and retention

In the highly competitive 3D printing market, customer acquisition and retention is a key element in the continued growth of a business. This section will explore in detail Kotler's Loyalty Ladder, Customer Lifetime Value (CLV), the role of relationship marketing, data analytic and CRM in customer loyalty, and penetration strategies for B2B and B2C markets, supported by citations from relevant literature.

2.5.1 Kotler's Loyalty Ladder

Kotler et al. (2017) stated that customer loyalty is built as a gradual and escalating process from awareness, experimentation, satisfaction, preference to loyalty. This theory emphasizes the need for companies to focus on each stage of the customer experience during customer acquisition and retention. The journey begins with the customer's initial awareness of the organization, followed by the customer's trial use of the product or service. After experimentation, if the experience meets or exceeds the customer's expectations, they move to the satisfaction stage. The accumulation of satisfaction drives customers to gradually develop a preference for the company's products or services, and ultimately, driven by a strong preference, customers reach the realm of loyalty, which manifests itself in sustained purchasing behaviors, a high degree of brand recognition, and positive word-of-mouth communication.

2.5.2 Customer Lifetime Value (CLV)

Customer Lifetime Value (CLV) is an important measure of the long-term profits that a customer brings to a business. In the 3D printing market, companies can analyse information such as customers' purchasing history and spending habits to predict their future value and develop marketing strategies accordingly. According to Philip Kotler and Kevin Ryan Keller et al. (2016) In recent years, studies have shown that CLV plays an important role in enhancing customer loyalty and business profits.

There is a close relationship between CLV and customer retention and acquisition. Firstly, by calculating and analyzing CLV, firms can identify which customers are the most valuable and thus develop targeted marketing strategies to retain these high-value customers. Ana et al. (2024) mentioned that for customers with higher CLV, firms can provide better service, better prices or more personalized product recommendations to enhance customer satisfaction and loyalty and reduce churn.

Secondly, Adiba et al. (2025) argued that CLV can also help firms optimize their customer acquisition strategies. By comparing CLV across different customer segments, firms can determine which market segments or channels have higher potential value, and thus market and develop customers in a more targeted manner. For example, if a particular industry or region has a higher customer CLV, an enterprise can increase its marketing investment in that segment or region to improve customer acquisition efficiency.

In addition, some studies have shown that incorporating CLV into a customer relationship management (CRM) system can significantly improve a company's customer retention and profitability. By tracking and analyzing customers' purchase history, behavioral patterns and preferences, companies can more accurately predict the future value of their customers and develop more personalized marketing strategies accordingly.

2.5.3 Relationship marketing

Gronroos (1994) stated that Relationship Marketing (RMM) is the process by which a firm, in its pursuit of profit, establishes and maintains good relationships with its customers, partners, and other stakeholders in the firm in order to facilitate long-term value exchanges and achieve sustained sales growth. The concept emphasizes the interaction and communication between a business and its customers, rather than just transnational behavior.

Importance of Relationship Marketing in 3D Printing Market.

1. Providing quality products and services

According to Wieland and Ivens (2025), in the 3D printing market, quality products and services are the cornerstone of building customer trust and loyalty. Companies need to ensure the accuracy, speed, and material compatibility of their 3D printing equipment to meet the individual needs of their customers. Building customer trust and loyalty, Gronroos (1994) elaborates that trust is a core element of relationship marketing. Wieland and Ivens (2025) stated that in the 3D printing market, companies need to build customer trust by providing consistent high-quality service and responding to customer issues and needs in a timely manner. This trust will motivate customers to choose the company's products and services in the long run, thus increasing customer loyalty.

2. Establishing an emotional connection with customers

Wieland and Ivens (2025) states that in addition to providing quality products and services, companies need to build emotional connections with their customers. This can be achieved through personalized service, caring for the customer's experience and active participation in the customer's community. Emotional connection enhances customers' sense of

identification and belonging to the company, which in turn enhances customer loyalty and satisfaction.

3. Promote word-of-mouth communication

Kotler et al. (2017) mentioned that satisfied customers tend to recommend good products and services they have used to others. In the 3D printing market, by providing quality products and services, building customer trust and loyalty, and creating an emotional connection with customers, firms can stimulate word-of-mouth spreading behavior among customers. This helps companies attract new customers, expand market share and enhance brand image.

4. Maximize the value of both parties

Gronroos (1994) argued that the ultimate goal of relationship marketing is to maximize the value of both parties. In the 3D printing market, enterprises can not only improve customer satisfaction and loyalty and promote word-of-mouth communication by establishing long-term and stable cooperative relationships with customers, but also gain a deeper understanding of customers' needs and preferences, so as to continuously optimize their products and services and enhance their competitiveness. At the same time, customers can also get better product and service experience, higher cost-effective and more personalized solutions from this kind of partnership.

2.5.4 Data Analytics and CRM

Nicolescu and Ioan (2024) explained that data analytics and CRM (Customer Relationship Management) systems play an important role in customer acquisition and retention. By collecting and analyzing information such as customers' purchase history, preferences, and feedback, companies can gain insights into customers' needs and behavioral patterns to develop personalized marketing strategies. At the same time, CRM systems can help enterprises better manage customer data, improve customer service quality and efficiency, and enhance customer satisfaction and loyalty.

2.5.5 Penetration Strategy in B2B and B2C Markets

A penetration strategy is a series of tactics and actions taken by a firm to enter or expand its share of a particular market. In B2B and B2C markets, enterprises need to develop targeted penetration strategies according to the characteristics of different markets and customer needs. Kotler and Kartajaya (2017) concluded that companies need to focus on customers' needs and pain points and provide customized solutions and quality services to build long-

term relationships in B2B market. For the B2C market, companies need to focus on product innovation and brand building to attract and retain consumers through diverse marketing tools.

In addition, Li et al. (2024) stated that enterprises can also actively interact with consumers through social media platforms, customer forums and other channels to collect feedback and continuously optimize products and services. By developing and implementing effective market penetration strategies, companies can stand out in the fierce market competition and increase market share and customer satisfaction.

Customer acquisition and retention play a crucial role in the 3D printing industry. By utilizing tools such as Kotler's Loyalty Ladder, CLV, Relationship Marketing, Data Analytics and CRM, as well as developing targeted B2B and B2C market penetration strategies and referring to relevant literature for in-depth research and practice, companies can continuously improve customer satisfaction and loyalty, thus gaining an edge in the fierce market competition.

2.6 Brand building

Branding occupies a core position in modern marketing, which is not only a means to enhance product recognition, but also a key to shaping long-term competitive advantage of enterprises. In this section, we will delve into brand awareness, brand image, brand equity and their roles in purchasing decisions, as well as analyze the differences between brand building in B2B and B2C markets, the integration of CRM and brand building, and the importance of community building in brand building. We will combine effective references in recent years in order to provide theoretical and practical guidance for brand building.

2.6.1 Brand Awareness and Brand Image

Brand awareness refers to the degree of consumers' basic cognition of a brand, while brand image is the overall impression and evaluation formed by consumers based on brand cognition. Brand awareness and brand image are the cornerstones of branding and directly affect consumers' purchasing decisions. Kim et al. (2018) stated that a strong brand can increase consumers' purchase intention and brand loyalty through positive brand image and deep brand awareness.

According to Abou-Shouk and Soliman (2021), the formation of brand awareness is a long and complex process, which is influenced by a variety of factors, including advertising, word of mouth, social media and so on. Companies need to continuously increase brand exposure

and awareness in the target market through diversified marketing tools. At the same time, Balmer and Gray (2003) argued that brand image as the consumer's overall perception of the brand, and its shaping needs to enterprises from the product quality, service level, corporate culture and other dimensions, to ensure that the brand in all contact points can leave a good impression on consumers.

2.6.2 Brand Equity

Brand equity refers to the added value that a brand brings to consumers and firms, including brand awareness, brand association, brand loyalty and brand perceived quality. Lefa et al. (2025) argued that brand equity is one of the most valuable intangible assets of an enterprise, which can not only bring sustained competitive advantage for the enterprise, but also build a strong defense for the enterprise in the fierce market competition.

Yoo and Donthu (2001) concluded that how brand equity management requires strategic vision and long-term planning. On the one hand, companies need to enhance the perceived quality and brand associations of their brands through continuous innovation and product quality improvement. On the other hand, Piriyakul et al. (2024) concluded that firms also need to develop and maintain consumer brand loyalty through effective customer relationship management. In the 3D printing industry, the management of brand equity is particularly important due to the rapid technological updates, and firms need to continuously adapt to market changes to keep their brands vibrant and competitive.

2.6.3 The Role of Brand in Purchase Decision Making

Brand plays a crucial role in purchase decision. Smith et al. (2018) concluded that brand reputation and product performance are key factors influencing the purchase decision of consumers when purchasing 3D printers. Brands can reduce consumers' purchase risk and increase the efficiency and satisfaction of purchase decisions. In addition, brands can enhance consumers' brand loyalty and sense of belonging through emotional resonance and social recognition.

Lopes (2020) argued that the role of branding in the purchase decision is not only in reducing the risk of purchase, but also in enhancing the consumer's buying experience and satisfaction. A company with a good brand reputation tends to provide better quality products and services, thus satisfying consumers' needs and expectations. At the same time, brands can also influence consumers' purchasing decisions and buying behaviour through channels such as word-of-mouth communication and social media. In the 3D printing industry, the role

of brands in purchasing decisions is particularly significant due to the high value and technical complexity of the products.

2.6.4 Branding in B2B and B2C

He and Zhang (2022) stated that there are significant differences in branding in B2B and B2C markets. The B2B market focuses more on brand professionalism, reliability, and customized services, while the B2C market focuses more on brand fashion, entertainment, and interactivity. Kothman and Faber (2016) stated that 3D printer manufacturers in the B2B market need to emphasize their technological prowess, industry experience, and customized solutions, while in the B2C market they need to focus on brand image building, optimization of product experience, and use of social media marketing in their study.

2.6.5 CRM and Branding

CRM (Customer Relationship Management) and brand building are closely related. Through CRM systems, companies can better understand consumer needs, purchasing behavior and preferences, so as to develop more accurate marketing strategies and brand building programs. Wieland and Ivens (2025) concluded that quality CRM can enhance brand loyalty and customer satisfaction, which in turn promotes brand word-of-mouth and market share expansion.

In addition, Gřešica et al. (2024) mentioned that CRM systems also support the implementation of personalized marketing strategies, such as customized recommendations, exclusive offers, etc., which can significantly enhance the customer experience and strengthen the emotional connection between brands and consumers. When customers feel uniquely cared for and valued by a brand, they are not only more willing to consistently purchase the brand's products or services, but may also become loyal fans of the brand and actively share their positive experiences on social media and other channels, bringing word-of-mouth communication effects to the brand.

2.6.6 Community Building and Branding

Community building is an important part of brand building. By building brand communities, enterprises can establish closer ties and interactions with consumers, and enhance consumers' sense of identity and belonging to the brand. Brown (2020) argued that brand

communities can not only increase consumers' brand loyalty and engagement, but also bring sustained word-of-mouth communication and brand value enhancement for enterprises.

Brodie (2017) stated that the construction and maintenance of brand communities require companies to invest a lot of time and energy. Enterprises can enhance interaction and connection with consumers by regularly organizing online and offline community activities, such as product launches, user exchange meetings and creative competitions. At the same time, companies can also use social media and other channels to actively respond to consumer questions and feedback, demonstrating the brand's affinity and sense of responsibility. Through these efforts, companies can not only enhance the image and status of the brand in the minds of consumers, but also stimulate the enthusiasm and creativity of consumers to participate, bringing a constant stream of innovation inspiration and market momentum for the brand.

3. Methodology

The core objectives of this Commercial Development Plan are to accurately position the target market, formulate reasonable pricing and promotional strategies, expand sales channels and build an efficient sales network, as well as to shape the brand image and enhance the effect of word-of-mouth marketing. This project analyzes the current market environment and user needs in depth through literature research, questionnaire surveys, and cluster analysis methods.

(1) Literature research method:

Checked the 3D printer market research related journals, literature, monographs and other materials, to obtain a series of marketing management related theories, to provide a detailed theoretical research basis for this thesis.

(2) Questionnaire:

In order to help Company M achieve steady sales growth in a competitive market environment, this thesis explores the mystery of consumer behaviour and market demand in depth, and guides the company's marketing strategy adjustment by constructing an accurate customer portrait. In July 2024, the author conducted a questionnaire survey on the marketing of 3D printers of Company M in the Chinese market by means of Questionnaire Star Survey, which was distributed to students, teachers and other people in the society, and the main area of distribution was Shanghai, A total of 200 questionnaires were distributed and 143 were actually received. And the number of valid questionnaires was 126. The questionnaire has been tested by Questionnaire Star with a reliability test of 0.802, which is more than the standard of the reliability test. The questionnaire can be viewed in Appendix A.

(3) Data analysis:

In order to analyse the data more accurately, the data collected from the questionnaire will be analyzed in depth using cluster analysis. IBM SPSS Statistics 19 software was used for cluster analysis. The clustering was done using systematic clustering and the algorithm used Pearson's correlation.

4. Commercial Development Plan

4.1. Executive Summary

Company M, as an enterprise with many years of experience in the field of 3D printing, is now launching a new series of 3D printers. According to the current status quo, the specific problems faced by Company M's new 3D printers in marketing are solved, including accurately positioning the target market, formulating reasonable pricing and promotional strategies, expanding sales channels and building an efficient sales network, as well as shaping the brand image and enhancing the effect of word-of-mouth marketing. The goal is to propose targeted commercial development strategies through in-depth research and analysis and brand building to help Company M stand out in the fierce market competition and achieve sales growth and market share expansion.

4.2. External Situational Analysis

4.2.1. PESTE Analysis

4.2.1.1. Political and Legal Context

In recent years, the Ministry of Education, the Ministry of Science and Technology, the Ministry of Industry and Information Technology, the Development and Reform Commission and other departments have issued support and encourage the development of 3D printer technology. The support and guidance of a series of national policies and the attention of local governments are extremely important for the rapid development of the 3D industry. China has many provinces to set up 3D printing alliance, the creation of 3D printing R & D centers, which will certainly promote the rapid development of China's 3D printing industry, and further rapid growth of China's 3D printing industry. m company benefit from the government's support policy for 3D printing technology. In recent years, the Chinese government has attached great importance to the development of 3D printing technology and introduced a series of encouraging policies, such as financial subsidies, tax incentives, etc., which provides a favorable policy environment for the development of enterprises such as Company M. The strategies related to the national 3D printing industry in 2022-2024 are organized as shown in Table 4.1.

Table 4.1: Strategies Related to 3D Printing Industry, 2022-2024

Publishing time	Publishing department	Name of policy	Interpretation of key elements	Nature of the policy
2024/2/1	State Council (PRC)	《Opinions on Accelerating the Construction of a Waste Recycling System》	Promote the remanufacturing of used and end-of-life equipment. Promote the application of non-destructive testing, additive manufacturing, flexible processing and other common key technologies for remanufacturing.	support category
2023/7/1	Ministry of Industry and Information Technology (abbr)	《Manufacturing Reliability Improvement Implementation Opinions》	Focus on improving the vertical/horizontal machining centres, five-axis linkage machining centres, milling and turning machining centres, heavy-duty CNC machines, large-scale die-casting machines, hydraulic/servo presses, laser welding and cutting equipment, vacuum heat treatment furnaces, additive manufacturing and other industrial mother machines, large-scale high-end intelligent agricultural machinery, small-scale agricultural machinery in hilly and mountainous areas and other agricultural equipment, industrial robots and other products, the reliability of the level.	support category
2023/2/1	PRC National Development and Reform Commission (NDRC), formed in 2003	《Guiding Opinions on Integrating Energy Saving, Carbon Reduction and Recycling to Accelerate Product and Equipment Renewal and Upgrading in Key Areas》	Regulate the remanufacturing of used products and equipment. Promote the application of non-destructive testing, additive manufacturing, flexible machining and other technological processes to enhance the level of remanufacturing processing. Accelerate the improvement of remanufacturing standards for used products and equipment.	support category
2022/8/1	Ministry of Industry and Information Technology (abbr)	《Public Announcement on the List of the First Batch of Typical Application Scenes of Additive Manufacturing》	Announcement of the list of typical application scenarios of additive manufacturing to be selected, including the four major fields of industry, medicine, construction and culture	support category
2022/3/1	Ministry of Industry and Information Technology (abbr)	《Letter on Call for Typical Application Scenarios of Additive Manufacturing》	In order to promote additive manufacturing to better serve economic and social development, collect a number of typical application scenarios of additive manufacturing, form results that can be replicated and learnt from, guide the user units and additive manufacturing enterprises to strengthen cooperation, research and development and application of additive manufacturing of special materials, equipment and application of technical solutions that are more suitable for the industry's needs and more advanced and applicable.	support category
2022/7/1	Ministry of Industry and Information Technology, Development and Reform Commission, Ministry of Ecology and Environment	《Peak Carbon Implementation Programme for Industry》	Accelerate additive manufacturing, flexible forming, special materials, non-destructive testing and other key remanufacturing technology innovation and industrialisation applications	support category
2022/4/1	Ministry of Science and Technology (MOST)	《National key R & D programme 'additive manufacturing and laser manufacturing' and other key special 2022 annual project declaration guidelines》	Including cross-scale self-lubricating composite structure additive manufacturing 'femtosecond laser electrochemical composite micro-nano additive manufacturing' 'material components of three-dimensional precise control of the powder bed fusion metal additive manufacturing' and other projects	support category

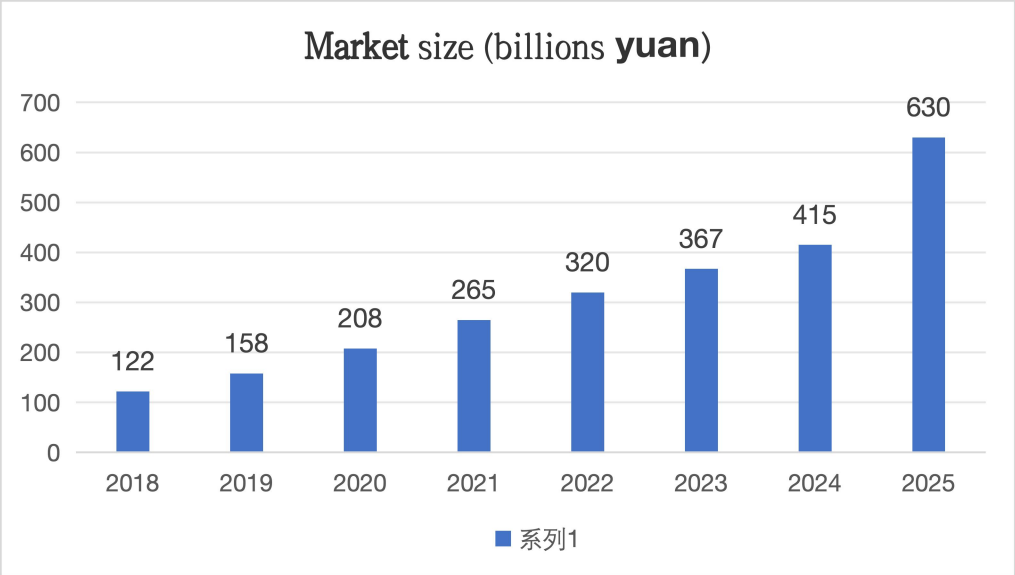
Source: Author (2025).

4.2.1.2. Economic Context

Europe and the United States and other developed countries 3D printer industry started more and accumulated rich experience, 3D printing technology is ahead of China. The development of China's 3D printing industry is relatively late, but China's 3D printers have developed rapidly in recent years, gradually entering the public eye, and going to the international market. As China's 3D printing technology is still in the stage of promotion and application, whether it is for personal consumption, or in the industrial field of application has a broad prospect for development. Driven by the gradual scale application of 3D printing

products and the release of demand for some backlogged 3D printing equipment, the “2024-2029 China 3D Printing Market Demand Forecast and Development Trend Forward-looking Report” released by the China Business Industry Research Institute shows that the market size of China's 3D printing market in 2022 will be about 32 billion yuan, an increase of 20.75% year-on-year, and the market size will reach 36.7 billion yuan in 2023. China 3D printing market size has reached 41.5 billion yuan in 2024, with significant year-on-year growth. This growth trend is expected to continue in 2025, and the China 3D printing market size is expected to exceed 63 billion yuan in 2025 and drive further expansion of the market size.

Figure 4.1: Trend forecast of China's 3D printing market size, 2018-2025



Source: CCID Forward-looking Industry Research Institute (2025)

4.2.1.3. Socio-Cultural Context

(1) Demographics: As the demographics change, Company M needs to focus on the needs of different age groups for 3D printing technology. For example, in the field of education, Company M's 3D printers can help students better understand complex structures and increase their interest in learning.

(2) Values: As environmental awareness increases, consumer demand for green manufacturing and sustainable development increases. company M needs to pay attention to changes in environmental regulations and actively adopt environmentally friendly materials and processes to meet market demand.

(3) Social acceptance: As an emerging technology, the social acceptance of 3D printing technology is still increasing, and Company M needs to strengthen publicity and promotion through various channels to increase the visibility and recognition of 3D printing technology.

4.2.1.4. Technological Context

(1) Technological innovation: Company M needs to pay attention to the latest development of 3D printing technology, strengthen technological research and development and innovation, and continuously launch competitive new products. At the same time, the Company also needs to pay attention to the development trend of other related technologies, such as artificial intelligence and Internet of Things, in order to promote the upgrading of 3D printing technology.

(2) Technology maturity: Company M's 3D printing technology already has a high degree of maturity and can meet the needs of different industries. However, with the intensification of market competition, the Company needs to continuously improve its technology and product quality in order to maintain its leading position.

(3) Intellectual property protection: Company M needs to pay attention to intellectual property protection, strengthen patent application and rights defense, and protect the company's technical achievements and trade secrets.

4.2.1.5. Environmental Context

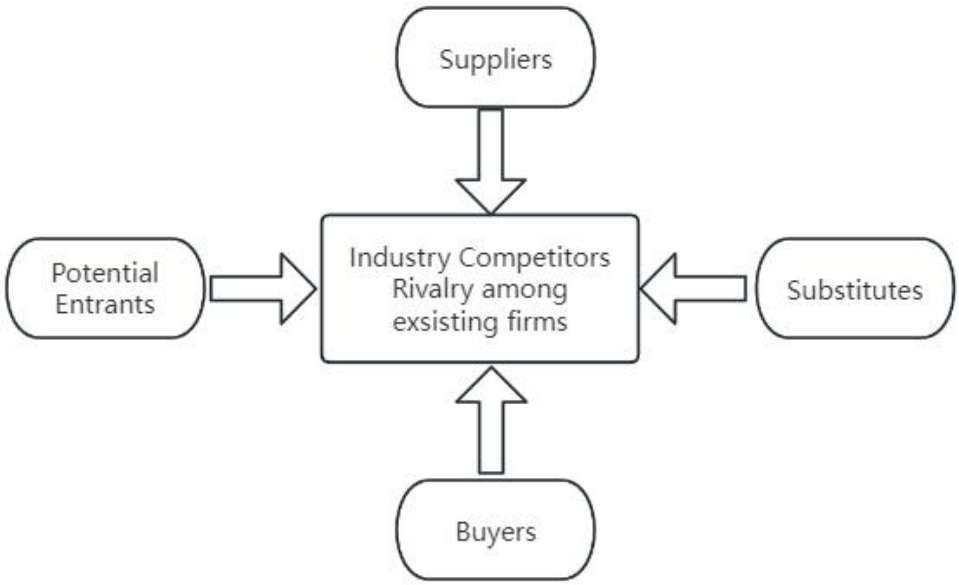
(1) Environmental protection regulations: Company M needs to comply with laws and regulations related to environmental protection, adopt environmentally friendly materials and processes, and ensure that the environmental performance of products meets the standard requirements. At the same time, the company also needs to pay attention to the trend of changes in environmental regulations and adjust the production process and product design in a timely manner.

(2) Sustainable development: Company M needs to pay attention to the issue of sustainable development and actively adopt green manufacturing technology and circular economy mode to reduce resource consumption and waste emissions. Through continuous improvement and innovation, we can realize the harmonious coexistence between the company and the environment.

4.2.2. Porter’s Five Forces Analysis

Michael Porter proposed the Porter's Five Forces Model in 1997 as an important tool to analyze the competitive dynamics of an industry, including supplier bargaining power, buyer bargaining power, threat of potential entrants, threat of substitutes, and the degree of competition among competitors in the industry. (Long, 2022) believes that the Porter's Five Forces model can help companies to fully understand the competitive situation and potential threats in the industry in order to develop more effective marketing strategies in 3D printer marketing.

Figure 4.2: Porter's Five Forces Model



Source: Michael Porter (1985)

(1) Threat of new entrants: with the continuous development of 3D printing technology and the increase of market demand, new entrants may bring some threat to Company M. The new entrants may also bring some threat to Company M. The new entrants may also bring some threat to Company M. However, due to the 3D printing equipment industry has a high technical threshold and capital requirements, new entrants need to face greater challenges.

(2) Threat of substitutes: Currently, although there exist some manufacturing technologies similar to 3D printing technology, such as CNC machining and injection molding, these technologies still cannot completely replace 3D printing technology in some aspects. Therefore, the threat of substitutes is relatively small.

(3) Buyers' bargaining power: Company M's buyers mainly include enterprises, educational institutions and individual users. When purchasing 3D printing equipment, these

buyers usually consider a number of aspects such as the performance, price and service of the equipment. In order to reduce the purchase cost, buyers may bargain with suppliers. Therefore, Company M needs to improve the price/performance ratio and service quality of its products to attract more buyers.

(4) Bargaining power of suppliers: Company M's suppliers mainly include equipment parts suppliers and material suppliers. These suppliers usually consider their own costs and profits when providing parts and materials. If the supplier's cost rises or the market competition is fierce, they may raise the price or lower the quality. Therefore, Company M needs to establish stable relationships with suppliers to ensure the stability and reliability of the supply chain.

(5) Competitiveness of competitors in the industry: as mentioned earlier, Company M faces pressure from several domestic and foreign competitors. These competitors have certain advantages in terms of market share, technology level and product innovation. In order to cope with the competition, Company M needs to strengthen its own technological research and development and innovation ability, improve product quality and service level, and actively participate in market competition and cooperation.

4.2.3. Sector Analysis

1. Market value and growth rate

According to the National Bureau of Statistics of China (2024), China's 3D printing equipment production grew 51.6% year-on-year in the first half of 2024, reflecting the industry's strong growth momentum. The global consumer 3D printer market reached $2.503 billion in 2022 and is expected to reach $7.1 billion by 2028, growing at a CAGR of 19.2%, according to a report by market research firm KBV Research. In the Chinese market, according to the data released in the China 3D Printing Industry Blue Book (2023 Edition), the size of China's 3D printing industry will be approximately $36.3 billion in 2022, a year-on-year growth of approximately 25%, demonstrating the rapid growth and huge potential of China's 3D printing market.

M, as one of the leading companies in China's 3D printing industry, has achieved significant growth in recent years. According to company data and industry reports, M's annual revenue has exceeded 100 million yuan and its cumulative shipments have exceeded 550,000 units, placing it firmly among the top in China. Its market value is growing rapidly, thanks to the overall expansion of the 3D printing market and technological advances. In addition, according to Wisdom Research Consulting, China's 3D printing market has reached 36.7 billion yuan in 2023 and is expected to continue to grow at a high rate in the coming

years. These figures indicate that the market in which Company M operates is experiencing rapid growth and has great potential.

2. Regional sales

Data from the National Bureau of Statistics shows that in the first half of 2024, China's production of 3D printing equipment products increased by 51.6% year-on-year, with its growth rate far exceeding that of new energy vehicles and integrated circuits. Data from the General Administration of Customs shows that from January to July 2024, China's 3D printing equipment export volume and export value also achieved double-digit high-speed growth.

Company M's sales have performed well in several regions, especially in overseas markets, mainly in Southeast Asia. According to company data, the market share of Company M's 3D printers in the United States is about 10%, Europe is about 15%, and the Middle East and Southeast Asia and other regions is about 18%. These data indicate that Company M's global sales layout is relatively balanced, with the Southeast Asian market being its main sales region.

In the Chinese market, M's products are also widely recognized. The company is headquartered in Shenzhen and has a manufacturing base in Wuhan, which enables it to better serve economically developed regions such as the Pearl River Delta and Yangtze River Delta. These regions have well-developed manufacturing industries and a high demand for 3D printing equipment, which provides Company M with a wide market space. Specifically, Guangdong Province is one of Company M's major sales regions, followed by Zhejiang Province and Shandong Province, among others. According to incomplete statistics, the sales in these regions accounted for a larger proportion of Company M's total sales, which had an important impact on Company M's overall sales performance.

3. Competitor Analysis

- Logs: In terms of competitors, Company M faces competition from a number of domestic and international brands. Domestic competitors mainly include companies such as Longitudinal Dimension Cube, Platinum Lite, and Xianlin 3D; foreign competitors include Stratasys, 3D Systems, and other internationally recognized companies. These competitors have their own advantages in terms of technology level, product line and brand influence.
- Product line: Company M's product line is relatively rich, covering a number of series of consumer-grade 3D printers. These products have different printing speeds, ac-curacies and material compatibility to meet the needs of different users. Meanwhile, Company M is constantly developing new products to respond to changes in the market and upgrades in user needs.

- Distribution: Company M's distribution channels include both online and offline modes. Online channels are mainly sold through e-commerce platforms and official websites; offline channels include agents, dealers and other partners. These distribution channels enable Company M's products to cover a wider range of user groups and increase market share.
- Communication strategy: Company M's communication strategy mainly includes online promotion and offline activities. Through online platforms such as social media and industry forums, as well as offline activities such as exhibitions and seminars, Company M has continued to enhance its brand awareness and influence. However, compared with other competitors, there may be some room for differentiation and innovation in its communication strategy. For example, it can strengthen its interaction and communication with users to increase their participation and loyalty; it can also explore more diversified communication channels and methods to better meet user needs and market changes.

4. Specific market information

- Education market: In the education market, 3D printing technology has become an important teaching tool. According to statistics from the Ministry of Education and other departments, in recent years China's educational institutions at all levels have been investing more and more in 3D printing technology, which has driven the rapid development of 3D printing in the education market.M has launched a variety of 3D printers suitable for teaching and learning for this market, and has provided a wealth of educational resources and training courses. These products can meet the needs of schools, training organizations and other educational institutions and help students better understand and master 3D printing technology.
- Industrial market: Although M mainly focuses on the consumer 3D printer market, it also has a certain layout in the industrial market. According to the National Bureau of Statistics, the demand for 3D printing technology in China's manufacturing industry continues to grow, driving the market demand for industrial-grade 3D printing equipment. some of Company M's products are able to meet the needs of industrial-grade users, such as high-precision printing and large-size printing. Meanwhile, Company M is also expanding its industrial applications and cooperating with companies in multiple industries to promote the widespread use of 3D printing technology in the industrial field.
- Individual creator market: For individual creators, 3D printing technology provides a new way of creation. According to industry reports and market research data, the demand for 3D printing equipment in China's individual creator market is also increasing. m has launched a variety of easy-to-use, cost-effective 3D printers for this market, and provides

a wealth of creative materials and tools. These products can meet the needs of individual creators and help them realize the transformation of their creativity and ideas.

In summary, M has demonstrated comprehensive business area coverage, strong growth momentum, diversified market segments and a well-established regional sales network in the 3D printing field. In the future, the Company will continue to maintain its leading position and promote the sustainable development of the industry with the continuous advancement of technology and expansion of application areas. Meanwhile, China's 3D printing market will continue to grow rapidly, providing more development opportunities for leading companies such as M Company.

4.2.4. Competitor Analysis

Company M 3D printer company is facing competitive pressure from various aspects in the current market environment. The main competitors include well-known domestic enterprises such as Platinum Lite, Xianlin 3D, Aurora Science and Technology, and Youyan Powder Material. All of these companies have deep accumulation and extensive market influence in the field of 3D printing.

As a leader in the consumer 3D printing ecosystem, M has demonstrated strong market dynamics and technological innovation. The company optimizes operational efficiency through digital management, and has a wide range of products, covering a full range of needs from 3D printers to scanners, engravers and consumables, and is deeply engaged in a number of market segments such as personal, education and manufacturing. With the concept of “Create Reality, Fulfill Dreams”, the company is positioned as an industry leader and continues to promote the popularization and application of 3D printing technology. With a professional team and excellent skills, Creative 3D continues to innovate and builds a comprehensive retail and distribution network, covering many countries and regions around the world. In terms of communication strategy, the company actively utilizes various platforms to enhance brand influence and establish close connection with consumers. There are currently the following competitors within the company's industry:

(1) Platinum Power: As one of the leading enterprises in the industry, Platinum Power has significant technological advantages and market position in the field of metal 3D printing. Its whole industry chain layout and strong R&D strength make M face greater competitive pressure in metal 3D printing equipment.

(2) Zongwei Cube: the company's business covers 200+ countries and regions worldwide, and so far, it has released more than 20 star products, with a cumulative sales volume of 1 million units, and has maintained high growth for 7 consecutive years. Scale

advantage: currently has over 20,000 + square meters of office space, nearly 1,000 employees.

(3) CCTV: CCTV has made achievements in both 3D scanning and 3D printing, with its rich product line and strong technical strength. M company needs to pay attention to CCTV's advantages in digital solutions when competing with it and seek for differentiated competitive strategies.

(4) Aurora Technology: Aurora Technology has strong competitiveness in the field of FDM and light-curing 3D printers, and its product quality and technology level are in the leading position in the industry. company M needs to pay attention to Aurora Technology's technological innovation and market dynamics in the process of R&D and production, so as to adjust its own strategy in a timely manner.

In order to visualize the difference between Company M and its competitors in terms of logos, product lines, distribution, communication strategies, etc., the following will be presented.

Table 4.2: Difference Between Company M and Its Competitors

	M Company	Platinum Power	Zongwei cube	CCTV	Aurora Technology
Logs	Years of focus on the 3D printing industry with rich experience	Industry leader with significant technical advantages in metal 3D printing	Global business coverage with seven consecutive years of rapid growth	Established presence in both 3D scanning and printing fields	Leading position in FDM and SLA 3D printers
Product Series	Covering FDM, SLA, and other types to meet diverse user needs	Specializing in metal 3D printing equipment	Numerous star products covering different price points and performances	Rich product line including 3D scanning and printing equipment	Primarily FDM and SLA 3D printers
Market Segment	Targeting multiple segments such as education, industrial design, and personal hobbies	High-end market in metal 3D printing	Extensive global coverage across multiple regions and markets	Niche markets for 3D scanning and printing	Mid-to-high-end market for FDM and SLA 3D printers
Positioning	Providing cost-effective and user-friendly 3D printing solutions	Technological leader in metal 3D printing	Offering high-quality, innovative 3D printing products	Provider of digital solutions with a focus on differentiated competition	Technological leader in FDM and SLA 3D printers
Skills & Management	Professional R&D team and efficient management system	Full industry chain layout with strong R&D capabilities	Scale advantages with large office space and workforce	Strong technical capabilities with a focus on digital solutions	Leading product quality and technology with a focus on innovation
Retail/Distribution Strategy	Combination of online and offline, covering multiple countries and regions globally	Unknown	Global coverage in over 200 countries and regions with extensive sales channels	Unknown	Unknown, but likely focuses on market dynamics and user needs
Communication Strategy	Brand promotion through social media, industry exhibitions, and other channels	Unknown	Unknown, but likely leverages star products and market growth for communication	Focuses on the dissemination of differentiated competition strategies	Focuses on the dissemination of technological innovation and market dynamics
Sales & Market Share	Holds a certain share in the 3D printing market with continuous growth	Faces significant competition but has significant technical advantages	Seven consecutive years of rapid growth with cumulative sales of 1 million units	Needs to focus on Xianlin 3D's advantages in digital solutions when competing	Strong competitiveness in the FDM and SLA 3D printer market

Source: Author (2025)

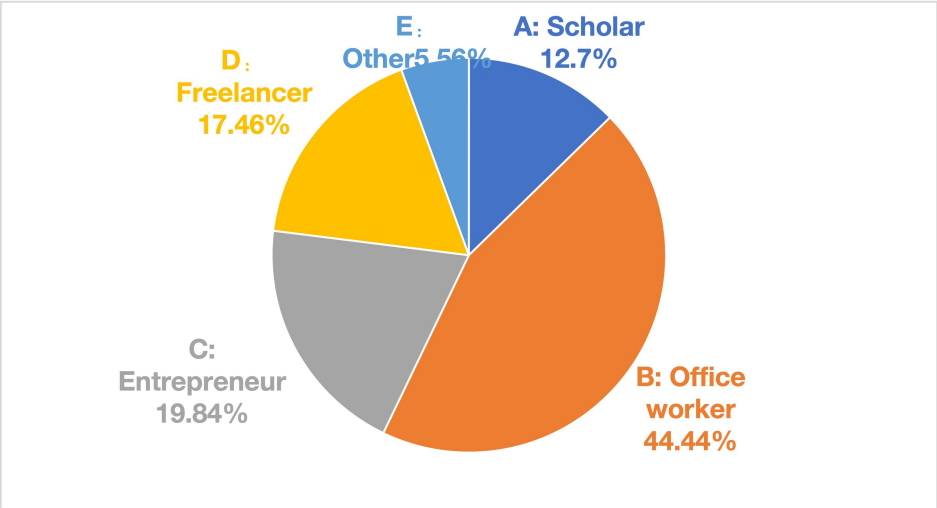
In order to cope with the competition, Company M needs to pay close attention to the dynamics of its competitors and understand their product characteristics, market strategies and direction of technological innovation. At the same time, the company also needs to strengthen its own technological research and development and innovation capabilities, and improve product quality and service levels to better meet market demand.

4.2.5. Consumer Analysis

The consumer market for 3D printers is highly influenced by customer's personal, cultural, social and psychological factors, and external marketing stimuli can also inspire customers' purchasing behaviour. The buying process usually involves clarifying the problem, searching for information, product evaluation, decision making, and purchasing behaviour. In the process of purchasing 3D printers, they usually conduct a comprehensive screening of products, analyse brand reputation, performance comparison, after-sales service, etc., and also consider the dealer factor to choose the right time to buy and the number of purchases.

In order to help Company M achieve steady sales growth in a competitive market environment, this thesis explores the mystery of consumer behavior and market demand in depth and guides the company's marketing strategy adjustment by constructing an accurate customer portrait. In the month of 2024, the author through the questionnaire star survey method, the company M new printer in the Chinese market 3D printer marketing questionnaire survey, the distribution of objects for students, teachers and other members of the community, the distribution of the main area for the region of Shanghai, the questionnaire has been done in the questionnaire star reliability test for 0.8, more than the standard of the reliability test. The occupational distribution of the respondents in the questionnaire is shown in Figure 4.2.5-1. After organizing the questionnaire, it is found that people are more inclined to buy the emerging products of 3D printers in brick-and-mortar stores, and people think that the price transparency and convenience of the products purchased online are better than those purchased in brick-and-mortar stores, while the quality of products and services in brick-and-mortar stores are better than those purchased online.

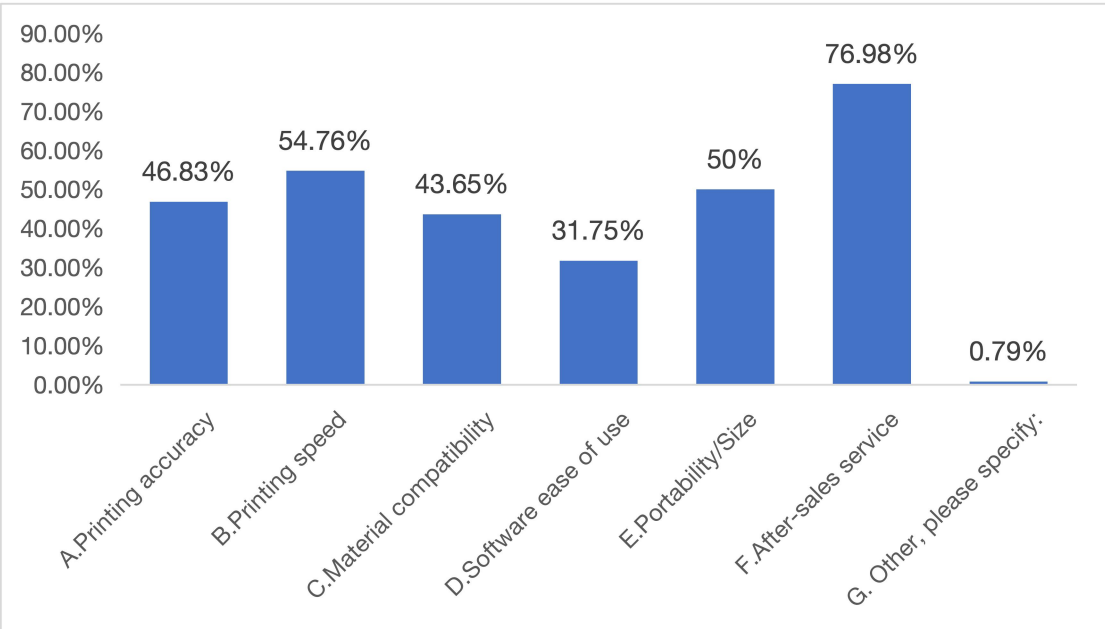
Figure 4.3: Occupational Distribution of Respondents



Source: Author (2025)

In addition, we can find in the consumer choice of 3D printers, the most important features or characteristics, we can see that consumers are now the most important after-sales service, so the company in the development of marketing strategies need to focus on after-sales service of the printer to take into account, a better quality of service, locking more consumers.

Figure 4.5: Distribution of Functions or Features Valued by Respondents in Product Selection



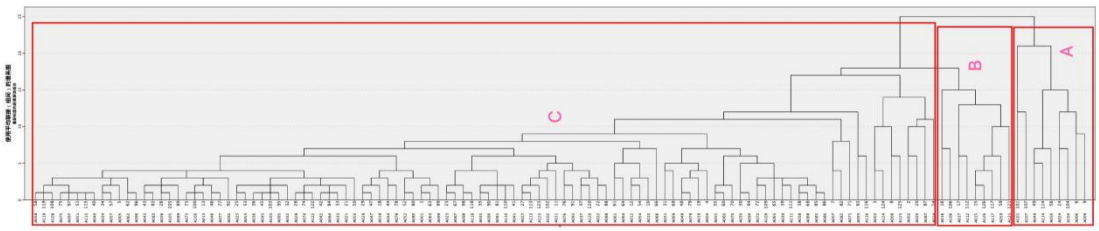
Source: Author (2025)

In order to do data analysis more accurately, according to the data collected from the questionnaire, cluster analysis technology will be used to analyze these data in depth.

Cluster analysis can not only identify the similarities and differences between consumer groups, but also help us to depict the typical characteristics, preferences and potential needs of different consumer groups, so as to build a three-dimensional, multi-dimensional customer portrait. These customer profiles will become an important cornerstone for M Company to understand market dynamics, improve product mix and formulate personalized marketing strategies. By accurately positioning the target customer groups, the company can allocate resources more effectively, improve market response speed, and ultimately achieve sustained sales growth.

In the following, users can be categorized through cluster analysis. Cluster analysis used IBM SPSS Statistics 19 software. The clustering uses systematic clustering and the algorithm uses Pearson's correlation.

Table 4.3: User cluster analysis table



Source:Author (2025)

Through cluster analysis, we can classify the questionnaire respondents into three categories: A, B and C. In the following, the data samples will be analyzed in terms of age, occupation, monthly income, knowledge of 3D printing technology, unit price, willingness to buy, and whether they are willing to receive customized promotional information.

In terms of the broad categories of these data, we can specifically categorize the sample consumers into 3 broad categories:

These include Category A, which is entrepreneurs, Category B, which is office workers, and Category C, which is academics or other professions: there is a similarity between Categories B and C, which are completely different from the consumers in Category A. Category A consumers are mainly entrepreneurs, office workers, and academics.

Consumers in category A are mainly entrepreneurs who do not have a high income. These customers are more sensitive to the price of goods, and they are less able to accept if they have to pay a little bit more expensive than traditional printers in the same kind of products, but they are more aware of new technological products. In addition, such customers generally want to personalize the promotional information. So for this type of users, you can recommend cost-effective, functional-oriented products.

Class B consumers are mainly office workers, their income is between 8000 and 16000, although they do not know much about 3D printers, but if they need to pay a little more

expensive than traditional printers in the same kind of products, they are willing to pay. For this kind of users, if you increase the exposure of some 3D printing brands, you can attract this kind of users through the promotion of Xiaohongshu, Shakeology expert, I believe it will increase the marketing revenue.

Class C consumers are academics or other practitioners in society. Such consumers are mainly between 20 and 40 years old, have higher incomes, are more knowledgeable about 3D printers, and are able to accept it if they have to pay a little more expensive than traditional printers in similar products. In addition, this type of customers generally want to personalize their promotional messages more. Therefore, for this type of users, the company should adopt a comprehensive marketing strategy, focusing on the 3D printer's personalized customization capabilities and technological advantages, sharing professional knowledge through educational lectures and seminars, organizing high-end experiential activities to allow customers to have a first-hand experience, and at the same time pushing personalized promotional information according to customer needs, strengthening content marketing and community building on social media, encouraging users to share and interact, and actively Seek cross-border cooperation opportunities to broaden the market and enhance brand influence to attract and retain this high-value consumer group.

Table 4.4: Different characteristics of Class A, B and C consumers and their corresponding marketing strategies

Consumer Category	Primary Demographic	Income Range	Level of Knowledge about 3D Printers	Price Sensitivity	Personalized Promotion Preferences	Marketing Strategy Recommendations	Sample percentage
A	Entrepreneurs	Not significantly high	High	High	Desired	Recommend cost-effective products with a focus on functionality	7%
B	Office Workers	8000-16000	Moderate	Medium	Unclear	Increase brand exposure for 3D printers through platforms like Xiaohongshu and TikTok influencers	7%
C	Academics/Other Professionals	Higher	High	Medium	Desired	Implement a comprehensive marketing strategy emphasizing personalized customization capabilities and technical advantages. Host educational lectures, seminars, and premium experience events. Leverage personalized promotional messaging, social media content marketing, and community building. Encourage user sharing and engagement. Seek cross-industry partnerships to expand market reach and enhance brand influence.	86%

Source: Author (2025)

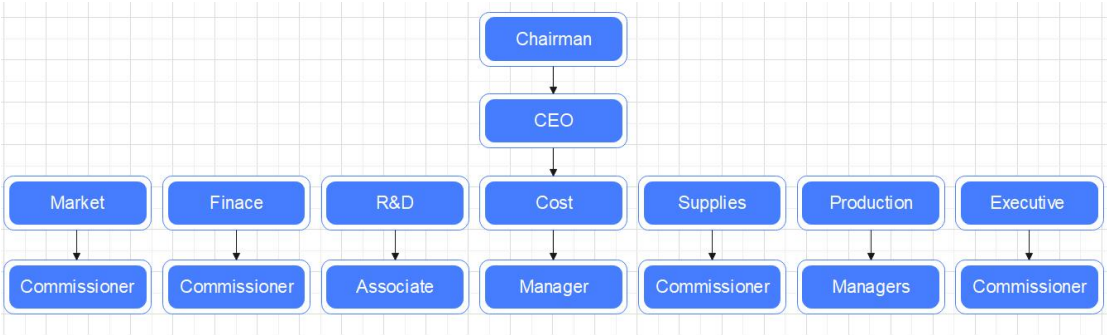
In summary, differentiated commercial and marketing strategies need to be developed for different types of consumers to meet their specific needs and enhance the purchase experience. Through precise market positioning and personalized marketing strategies, consumers' purchase intention and brand loyalty can be effectively enhanced.

4.3. Internal Situational Analysis

4.3.1. Characterization of the company

Company M is a globally recognized 3D printer manufacturer, which has always been committed to the research and development, innovation and market application of 3D printing technology since its establishment in 2014. Headquartered in Shenzhen, the company has a strong R&D team and advanced production lines, and its products cover a wide range of fields such as FDM and light-curing, making it a leader in the field of consumer-grade 3D printing. The high quality and stable performance of M Company's products have been well received and trusted by users around the world.

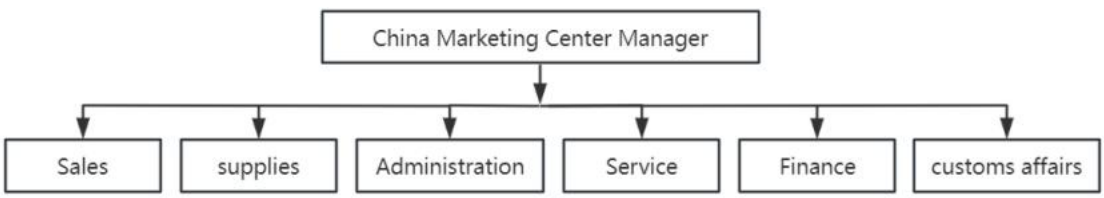
Figure 4.5: Company M Organization Figure



Source: Company M Internal Data (2025)

M Company marketing center in China is composed of six departments, including sales, materials, and administration, as shown below.

Figure 4.6: Company marketing center in China



Source: Company M Internal Data (2025)

4.3.2. Mission, vision and values

Mission - M's mission is to promote the popularization and application of 3D printing technology, so that more people can enjoy the convenience and fun of technology. The company is committed to providing high-quality, high-performance 3D printing equipment, and providing high-quality 3D printing solutions for users around the world.

Vision - M's vision is to become a global leader and innovator in the 3D printing industry, and to lead the direction of the 3D printing industry through continuous technological innovation and market expansion.

Values - Customer first: always put customer needs in the first place, listen to customers' voices, and provide customers with the best quality products and services.

Innovation-driven: adhere to technological innovation and product innovation, and constantly launch new products that meet market demand.

Quality Assurance: Strictly control product quality to ensure that each piece of equipment meets high standards and strict requirements.

Teamwork: Encourage the spirit of teamwork and cooperation, and jointly contribute to the development and growth of the company.

4.3.3. Sales

The sales team of Company M has rich industry experience and professional knowledge, and is able to provide customers with personalized sales solutions. The company has established a perfect sales network and service system through the combination of online and offline, providing convenient and efficient purchase and after-sales service for global consumers. Meanwhile, the company also focuses on close cooperation with its partners to jointly expand its market share. In addition, M Company also actively participates in all kinds of industry exhibitions and technical seminars to expand sales channels and partnerships, and improve brand awareness and influence.

The current sales channels include Amazon, Tmall, Jingdong, Sizzle, eBay, independent stations, agency customers and offline flagship stores.

4.3.4. Product range

Currently, the product lines within M are as follows:

(1) FDM (Fused Deposition) series: including Ender series, CR series, etc. for different levels of users, such as Ender-3, CR-10, etc.

(2) Light-curing (SLA/DLP) series: such as LD series and HALOT series, for high precision and high-speed printing needs.

(3) Education-specific series: such as the CR-2030, especially designed for creator education.

M's main sales targets:

(1) Enterprise users: to provide efficient and stable 3D printing equipment to help enterprises improve productivity and innovation.

(2) Educational Institutions: Provide quality 3D printing equipment and teaching programs for educational institutions to help students better understand and master 3D printing technology.

(3) Individual users: Provide easy-to-use and stable 3D printers for individual users to meet their personalized and creative needs.

M will provide customized products and services according to the needs and scenarios of different customers to meet the diversified needs of the market. Meanwhile, the company will also continue to strengthen its technology research and development and innovation capabilities, and continuously launch new products that meet market demand, so as to provide customers with better 3D printing solutions.

4.3.5. Research and Development

Company M attaches great importance to R&D investment and technological innovation. The Company has a strong R&D team consisting of hundreds of R&D personnel with rich professional knowledge and practical experience, who are dedicated to application technology development, underlying technology research and frontier technology exploration. The company constantly launches innovative and competitive new products to meet the ever-changing market and diversified needs of users. Meanwhile, we also actively participate in international technical exchanges and cooperation, introducing international advanced technology and management experience to enhance the core competitiveness of the company.

4.3.6. Objectives

Short-term goal: In the next few years, we will continue to increase R&D investment and market expansion to further consolidate and expand our market share; at the same time, we

will strengthen cooperation with upstream and downstream enterprises in the industry chain to jointly promote the prosperous development of the 3D printing industry.

Long-term goal: We are committed to becoming a global leader in 3D printing technology, and to promote the widespread application and development of 3D printing technology through continuous technological innovation and market expansion; we will continue to explore new application fields and market opportunities, and make greater contributions to the progress and prosperity of human society.

4.3.7. Competitive Advantages

The competitive advantages of Company M are mainly reflected in the following aspects:

(1) Leading technology: With a strong R&D team and a number of core technology patents, we are able to continuously launch innovative and competitive new products.

(2) Brand influence: as a globally recognized 3D printing technology solution provider, we have high brand awareness and reputation in the industry.

(3) Market Layout: We have established a perfect sales network and service system, and our products are exported to many countries and regions around the world, with a broad market base.

(4) Industry chain integration: We have built a perfect 3D printing ecosystem and the Creative Cloud integrated 3D printing platform around the "one body, two wings" strategic layout, forming a strong industry chain integration capability.

(5) Customer service: We focus on customer experience and service quality, providing high-quality pre-sales consulting and after-sales service, and have won the trust and praise of our customers.

4.3.8. Finance

1. Total sales, segments and product categories for the past three years

Over the past three years, Company M has demonstrated strong growth momentum. In terms of sales, the Company's revenue for the first half of 2024 has reached RMB123 million, representing a year-on-year growth of 32.3%, while the full-year 2023 revenue has reached RMB418,176,700, representing a year-on-year growth of 22.56%, demonstrating the Company's continued expansion of its business and the wide recognition of the market.

In terms of market segments, Company M is focused on focusing on the consumer 3D printing market, with its products widely used in a variety of fields including personal, home, and education. Its product categories include desktop 3D printers, 3D scanners, accessories and consumables, forming a complete 3D printing ecosystem.

2. Profitability and ROI

As it involves the company's privacy, the company's marketing department is unable to provide specific data on profitability and ROI, but based on the growth of net profit in the company's performance report, it can be inferred that Company M has high profitability and good return on investment. In particular, in 2023, the Company's net attributable profit increased significantly by 32.5% year-on-year, a figure that not only reflects the strong growth of the Company's business, but also the superior ability of the Company's management in cost control, market expansion and technological innovation.

3. Current Marketing Strategy

Company M's current marketing strategy begins with a clear definition of the target market, which mainly consists of the manufacturing industry for product prototyping, small batch production, and so on. Educational institutions are used to enhance students' innovation and hands-on skills. Individual creators are used to satisfy personal creation needs.

In addition, M achieves product differentiation and cost-effectiveness: for example, CR-10 series, by redesigning the machine structure and reducing the hardware cost, it provides products with affordable price but superior performance. Ease of use, such as the CR-i3, reduces the assembly time to less than 15 minutes and lowers the threshold of use.

In order to achieve these goals, M Company has adopted a multi-channel sales strategy, not only stationed in the mainstream e-commerce platforms such as Amazon and eBay, but also set up several brand-independent stations in order to cover many countries and regions around the world. At the same time, Company M actively utilizes the power of social media and Netflix marketing, and cooperates with famous overseas 3D printing enthusiasts to show product use cases through video and graphic content to enhance brand exposure and user stickiness.

4.Brand Awareness

Although Company M's brand awareness has been recognized to a certain extent, including recognition from authoritative industry certifications and market research reports, there is clearly room for further improvement. In order to enhance brand awareness, Company M can continue to deepen its cooperation with authoritative industry organizations and strive for more high-quality awards and certifications; at the same time, it can strengthen its market research, pinpoint its target audience and formulate more targeted marketing strategies. In social media and forums, we can attract more users through creative content and interactive activities to expand the brand's reputation. In addition, we continue to optimize the user community experience and encourage user-generated content to create a stronger word-of-mouth effect. Finally, increase media publicity, especially by utilizing new media platforms to tell the brand story in a more vivid and interesting way, to enhance the

public's recognition and goodwill towards Company M, thus comprehensively promoting the re-improvement of brand awareness.

4.4. SWOT Analysis

Strengths

- Strong technical strength: Company M has profound technical accumulation in the field of 3D printing and is able to continuously launch innovative and leading products to meet the market demand for high-performance 3D printers.
- Comprehensive product line: From entry-level to professional, desktop to industrial, M's 3D printer product line covers all levels and application scenarios to meet the needs of different users.
- Excellent quality: M Company focuses on product quality, through strict production process and quality control, to ensure that each 3D printer meets high quality standards, providing users with stable and reliable printing experience.
- Perfect after-sales service: the company has established a perfect after-sales service system to provide users with timely and professional technical support and maintenance services, to ensure that users have no worries in the process of use.

Weaknesses

- Limited brand awareness: Compared with some international famous brands, M Company still needs to improve its brand awareness, and needs to strengthen brand publicity and market promotion.
- Lack of competitiveness in the high-end market: In the high-end 3D printer market, there is still a gap between Company M and international famous brands, and it needs to further improve product performance and technology level.
- Higher R&D costs: Due to the special nature of 3D printing technology, the R&D investment is large, and Company M needs to continue to invest in technology R&D and product innovation.

Opportunities

- Market demand growth: with the continuous development and popularization of 3D printing technology, the market demand will continue to grow, providing a broad market space for M Company.
- Policy support: The government has given strong support and policy inclination to 3D printing and other high-tech industries, which provides a favorable development environment for Company M.
- Huge potential in education market: With the advancement of education informational, 3D printing is more and more widely used in the field of education, Company M can further

expand the education market and launch more 3D printers suitable for schools and students.

- International Market Expansion: With the acceleration of globalization, Company M can actively explore the international market and sell its products all over the world to enhance its brand awareness and market share.….

Threats

- Rapid technological upgrading: 3D printing technology is rapidly upgraded, and Company M needs to keep up with the technological development trend and continue technological innovation and upgrading in order to maintain market competitiveness.
- Strong competitors: There are many strong competitors at home and abroad, who constantly launch new products and technologies, posing a certain threat to Company M.
- Risk of intellectual property protection: In the process of technological innovation and product development, Company M needs to focus on intellectual property protection to avoid technology leakage and infringement disputes.

Company M has strong technical strength and comprehensive product lines in the field of 3D printers, but also faces disadvantages such as limited brand awareness and lack of competitiveness in the high-end market. However, with the growth of market demand and policy support, Company M has ushered in tremendous development opportunities. In order to maintain its leading position in the market and achieve sustainable development, Company M needs to continue to strengthen its technological research and development and innovation capabilities to enhance product performance and quality; at the same time, it needs to strengthen its branding and marketing to increase brand awareness and reputation; and it needs to pay close attention to the market dynamics and competitors' situation to formulate an effective competitive strategy.

4.5. Objectives of this plan

The core objective of this project is to deepen M's position in the 3D printing market and in particular to achieve significant growth in the areas of customer retention and development. To this end, we have further refined and expanded the scope of our objectives based on the original short-term and long-term goals, specifically covering customer retention, market development, reducing inventory buildup, increasing market penetration, and raising average sales.

I. Short-term objectives (1-2 years)

1. Customer Retention:

Reduce customer churn: Reduce customer churn to less than 80% of current levels by strengthening customer relationship management and providing personalized services and solutions.

Enhance customer satisfaction: Optimize the after-sales service system to ensure customer satisfaction of over 90%, thus enhancing customer stickiness.

2.Market Development:

New Customer Acquisition: Increase the number of new customers by 20% per year through precise marketing strategies, such as social media marketing and industry exhibitions.

Market Penetration Increase: 5% increase in market penetration in key market segments such as education, industry, and individual creators respectively.

3.Operation optimization:

Reduce inventory buildup: Reduce inventory buildup by optimizing supply chain management and production planning, and increase inventory turnover to more than 2 times per year.

Increase average sales: Achieve 15% increase in average sales through product mix optimization and pricing strategy adjustment.

II. Long-term goals (3-5 years)

1. Customer retention and development:

Establish a customer loyalty program: Build a comprehensive customer loyalty system through point rewards, exclusive member benefits and other measures to increase the proportion of long-term customers to over 60%.

Deepen market development: On the basis of maintaining the existing market share, further expand overseas markets, especially in regions of high demand such as North America, Europe and Asia, and increase the international market share by 10 percentage points.

2. Brand influence enhancement:

Brand building and publicity: Enhance M's visibility and influence in the global 3D printing industry by participating in internationally renowned exhibitions, sponsoring industry forums and other activities.

Technological innovation and product R&D: Continuously increase R&D investment and launch products and technologies with disruptive innovations to lead the industry.

3. Sustained growth and profitability:

Achieve sustained revenue growth: in the next three to five years, achieve sustained and stable growth in annual revenue with a growth rate of not less than 30%, and promote the sustained growth of the company's revenue through the continuous introduction of new

products, optimization of the sales network and service system as well as the strengthening of cooperative relationships with international partners.

Enhance profitability: Optimize the cost structure, improve operational efficiency, and ensure that the company's net profit margin remains at an industry-leading level.

4.6. Commercial Strategy: Marketing, Sales and Business Development

In the blue ocean market of the 3D printing industry, Company M has successfully targeted a number of market segments with great potential, including education, industry and individual creators, by virtue of precise market segmentation and clear market positioning. Based on this solid foundation, Company M has developed a comprehensive and in-depth business strategy covering four core segments: marketing, customer development, sales and business development. In this section, we will elaborate on the specific strategies and practices of Company M in these four areas, showing how it has ensured steady progress in the highly competitive market through accurate market insights, comprehensive customer care, efficient sales strategies, and continuous business development, and how it has continued to consolidate and enhance its leading position in the market.

1. Market segmentation

Company M has segmented its target market into the following three main areas:

(1) Education market: Targeting schools and educational institutions, it provides 3D printing equipment, teaching kits and related curriculum support applicable to the education field. The awareness of 3D printing technology among this market segment is increasing year by year, and more and more schools and educational institutions are beginning to incorporate 3D printing technology into their teaching programs.

(2) Industrial market: For enterprises in manufacturing, aerospace, medical and other industries, we provide high-performance, high-precision 3D printing equipment and solutions. The demand for 3D printing technology in these industries is mainly focused on product development, prototyping and small batch production.

(3) Individual creator market: for individual hobbyists, designers and geek players, providing diversified and personalized 3D printer products. This part of the user group pursues creativity and personalization, and has a high degree of acceptance of 3D printing technology.

2.Market Positioning

The market positioning of M's 3D printers can be summarized as “cost-effective and easy to use “3D printing solution provider’. This positioning is reflected in the following aspects:

Cost-effective products: Company M focuses on cost control and performance improvement of its products, through technological innovation and large-scale production to reduce

product costs, while ensuring that the quality and performance of its products meet the needs of users. This makes its 3D printers in the market has a high cost-effective advantage.

Easy to use products: M's desktop 3D printers are simple in design, easy to operate and popular, suitable for the majority of individual users and beginners. At the same time, its product line is rich and diverse, covering multiple levels from entry-level to professional, to meet the needs of different users.

Solution Provider: M not only provides 3D printer products itself, but also committed to providing users with a full range of 3D printing solutions. Including software support, material supply, technical training, after-sales service and other one-stop services to help users better apply 3D printing technology to solve practical problems.

3. Customer development strategy

In terms of customer development, M Company has adopted the following strategies to deepen customer relationships and enhance customer value:

Customized service: M Company deeply understands the specific needs of customers and provides a full range of customized services from design consultation, material selection to post-processing to ensure that customers get the best 3D printing solutions.

Customer Relationship Management (CRM) Optimization: M Company utilizes an advanced CRM system to integrate customer information and achieve refined management of the customer life cycle, including the excavation of potential customers, the maintenance of existing customers and the recovery of lost customers.

Value-added service provision: Company M not only provides 3D printing services, but also offers related training, technical support and consulting services to help customers better utilize 3D printing technology to improve business efficiency.

Customer Loyalty Programs: Company M has designed a series of customer loyalty programs, such as points redemption and membership privileges, to incentivize repeat purchases and referrals of new customers, creating a word-of-mouth spreading effect.

4.Sales Strategy

In terms of sales strategy, Company M has taken the following measures to ensure the achievement of sales targets:

Multi-channel sales layout: Company M combines various channels such as online e-commerce platforms, offline experience stores and industry exhibitions to expand market coverage and enhance brand awareness and influence.

Flexible Pricing Strategy: Company M has developed a differentiated pricing strategy based on market demand, competitive conditions and cost structure to ensure competitiveness in different market segments.

Sales team training and incentives: M Company regularly trains its sales staff on product knowledge, sales techniques and industry dynamics, while setting up a reasonable incentive mechanism to stimulate the enthusiasm and creativity of the sales team.

After-sales service reinforcement: Company M provides quick response after-sales service, including technical support, maintenance and return service, to ensure the continuous improvement of customer satisfaction and trust.

4.7. Marketing-Mix

After determining the market positioning of Company M, it is necessary to develop an appropriate marketing mix strategy to bring its own advantages into play to meet the target market and customers. 3D printing's professionalism, technology, and interdisciplinary determine that the marketing strategy should be formulated in conjunction with the characteristics and advantages of the 3D printing industry in order to improve the effectiveness of the marketing strategy.

4.7.1. Product

M is committed to building a comprehensive and innovative 3D printer product line to meet the diverse needs of different user groups. Its product line covers a wide range from entry-level to professional, including desktop-grade FDM (Fused Deposition Modelling) 3D printers, high-precision SLA (Light Curing Authoring) 3D printers, as well as customized solutions for the fields of education, industrial design, and art creation. By continuously expanding and optimizing its product line, M ensures its comprehensive coverage and competitiveness in the market.

In terms of new product development, M keeps up with industry trends and continues to invest in R&D resources to introduce new products with innovative technology and superior performance. These new products not only improve printing speed, accuracy and stability, but also incorporate cutting-edge technologies such as intelligence and networking, bringing users a more convenient and efficient printing experience. Meanwhile, M also focuses on user feedback and adjusts its product strategy according to market demand to ensure the market adaptability and competitiveness of new products.

Packaging, as an important part of the product, is also given high priority by M Company. The company uses environmentally friendly, durable and branded packaging materials to ensure the safety and integrity of the products during transport. At the same time, the packaging design focuses on the clear communication of information and the display of

brand image, through the exquisite appearance and practical internal structure, to enhance the user's first impression of the product and desire to buy.

Brand is one of the most valuable intangible assets of M Company. The company is committed to building a brand image with industry influence and user recognition, shaping the brand image through high-quality products, professional services, active brand communication and social responsibility practices. M focuses on brand storytelling and brand culture dissemination, and establishes an emotional connection with the users through a variety of online and offline channels to enhance their sense of identity and loyalty to the brand. Meanwhile, the company also actively participates in industry exhibitions, technical exchanges and other activities to enhance brand awareness and influence, laying a solid foundation for market expansion.

4.7.2. Price

Pride and Ferrell believe that pricing is a specific quantification and expression of the value of the goods in the transaction, and its purpose is to pursue profit maximization. But the price is also a major factor affecting the behavior of consumers to buy the goods, so M Company pricing to follow the current market laws, pricing strategy, for different objectives using different pricing strategies, so the pricing strategy is based on the transfer of marketing objectives, the need to use different pricing methods.

For different consumer groups price strategy should be different. For example: the family user group is large, the price of 3D printers for home users should take the low-priced line, the price is recommended at about 2,000 yuan, the principle of taking profit by volume; consumer target is the creator, education target, 3D printer demand is not as large as the family user group, the market demand in general, the pricing should be a little higher than the price of the family users, the recommended price of about 5,000 yuan; and then the scientific research or business units, as They use 3D printers to research and development or production products, the printer demand is less, often more personality needs, for this type of product should take the high price route, the price is recommended to more than $10,000 or even higher prices. By providing differentiated services, Company M has more room for autonomy, and through this bargaining method, it can achieve a transaction price that satisfies both buyers and sellers. Such a bargaining method can not only show the flexibility of the store, but also the opportunity to communicate with customers, the store owner can not only collect the customer's idea of information for market research, but also to bring the two sides closer together, enhance the store's reputation, and enhance customer loyalty. For agents to buy products in the purchase price should be given on the basis of certain

concessions, the formulation of the range of incentives for agents is mainly based on the amount of a single order, the total amount of annual orders to determine the incentive equivalent value of the exchange volume, the use of more orders to send more sales model, to increase the encouragement of agents, a total of five levels of incentives, you can enjoy more than one year times the incentive strategy. At the same time, the agents are required to sell products to the outside world prices can not be lower than the minimum sales price given by M Company in China Marketing Center.

Table 4.5: Product categories of M's four main competitor companies

Serial No.	Competitor rival name (brand)	Principle of moulding	Price range (RMB)	Areas of application	styles
1	Platinum Power	FDM	6 499-398 000	Children's/Household/Educational/Creative Design/Industrial	19 styles
2	Zongwei Cube	FDM	1 500-49 800	Children's/Household/Educational/Creative Design/Industrial	16 styles
		SLA	178 000-298 000	Industrial-grade, high-precision modeling	
		DLP	66 000	Jewelry/Dental/Art & Industrial Design	
3	Aurora Technology	FDM	1 300-28 000	Children/Home/Educational/ Creative Design/Commercial	34styles
		LCD	3 500	Dental/jewellery paraffin casting inversion	
		DLP	26 000-58 000	High-precision printing for jewellery and dentistry	
4	CCTV	FFF	1 999-20 000	Family/Education/Creativity/ Design	13 styles
		DLP	20 000-49 999	Jewelry/Dental/Mold Turning	
		FDM	12 000-20 000	Oversized sculpture	
		MJP	30 000	Precision investment casting of jewelry, etc.	

Source：ZDC Internet Consumption Research Centre (2025)

4.7.3. Place

Effective product sales channels are a key factor in marketing, as they serve as a bridge to deliver the company's products and services to customers. A good channel means that customers can find and get the company's products more conveniently, so minimizing the delivery cost and continuously improving the delivery efficiency are the key considerations of the company's channel strategy.M, as a leading company in China's 3D printing industry, has a wide range of diversified product sales channels designed to meet the needs of different market segments. The products are sold to many countries and regions around the world through various channels such as direct sales, e-shops and partners.

With a professional sales team, Company M conducts direct sales through its official website, official e-commerce platform and direct communication with customers. This channel approach allows the company to provide customized solutions and efficient services directly to high-end customers such as large corporations and research institutes. The advantage of the direct sales channel is that it can respond quickly to customer needs and establish long-term stable relationships.

Retailer selection: Company M has established close cooperation with a number of well-known e-commerce platforms at home and abroad, such as Tmall and Jingdong. These e-commerce platforms, as e-shops, have a large user base and a perfect logistics system, which can help Company M quickly cover a wider group of consumers. In addition, Company M also sells its products to many countries and regions around the world through a network of agents and distributors.

E-shop: In addition to co-operating with e-commerce platforms, M Company also provides a convenient online shopping experience through its own official website and online shopping mall. Consumers can browse product details, compare different models, place orders and enjoy after-sales service on the official website.

M Company's 3D printer products are sold in many countries and regions around the world, especially in North America, Europe, Asia and other regions with strong market demand. In the Chinese market, M Company's products are widely used in education, scientific research, industrial design and many other fields, and has set up branches or offices in Beijing, Shanghai, Sichuan and other places in order to better serve local customers.

Sales Channels

Own shop: Company M has built its own shop channel through its official website and online shopping mall. This channel not only provides product display and purchase functions, but also offers consumers one-stop solutions such as online consultation, technical support and after-sales service.

Supermarkets: As 3D printers are professional equipment, they are usually not sold in traditional supermarkets. However, Company M may co-operate with some technology product shops or professional markets to set up experience areas or display cabinets for consumers to experience the products first-hand.

Partners: Company M has established long-term and stable relationships with many partners in the industry, including agents, distributors and system integrates. These partners have rich resources and channel advantages in their respective fields, which can help Company M promote its products to more market segments and application areas. Through

the joint efforts of the partners, M's 3D printer products have been widely used and recognized worldwide.

Table 4.6: Sales channels utilized by each of Company M's market segments

Segment	Sales Channels	Description
Large Enterprises, Research Institutions	Direct Sales	Through official websites, e-commerce platforms, and direct communication, providing customized solutions and efficient services.
Broad Consumer Base	E-commerce Stores	Partnering with renowned domestic and international e-commerce platforms (e.g., Tmall, JD.com) and operating own official websites and online malls for convenient online shopping experiences.
Global Regions (e.g., North America, Europe, Asia)	Partners	Collaborating with agents, distributors, system integrators, etc., leveraging their resources and channel advantages to reach more market segments and applications.
China Market (Education, Research, Industrial Design, etc.)	Direct Sales + E-commerce Stores + Partners	Establishing branches or offices in Beijing, Shanghai, Sichuan, etc., to serve local clients through direct sales, e-commerce stores, and partners.
Tech Product Specialty Stores/Professional Markets	Exhibition Areas	Partnering with tech product specialty stores or professional markets to set up exhibition areas or display cabinets for hands-on product experiences.

Source：Author (2025)

4.7.4. Promotion

Promotional skills are an important part of a company's marketing strategy, and in light of the lack of promotional capacity planning for Company M's marketing centers in China, there is a need to strengthen commercial development Planning capabilities to develop and ensure effective implementation of marketing strategies that closely follow the target markets and key markets where 3D printers are sold in high volumes. The following are the promotional strategies developed for each segment of Company M's market.

1. Large enterprises, research institutions

- Customized Solution Showcase: Regularly hold customized solution showcases exclusive to large enterprises and scientific research institutions, inviting industry experts and potential customers to participate and demonstrate Company M's professional capabilities and success stories in the field.
- Industry Forums and Seminars: Actively participate in or sponsor forums and seminars in related industries to enhance the company's visibility and influence in the industry through technology sharing and round-table discussions.

- One-on-one in-depth visits: set up a professional sales team to conduct one-on-one in-depth visits to key customers to understand specific needs, provide customized solutions, and establish long-term relationships.

2. Wide range of consumer groups

- Influencer marketing: cooperate with famous tech bloggers, designers, artists, etc., to promote M's 3D printer products through their influence, share the experience of use and creative achievements.
- Social Media Marketing: Utilize social media platforms such as Weibo, WeChat, and Jitterbug to publish product introductions, usage tutorials, user cases, and other content to increase brand exposure and user interaction.
- Limited-time discounts and promotions: Regularly launch limited-time discounts, full-reduced offers, giveaways and other promotions on e-commerce platforms and its own official website to attract consumers to buy.

3. Multiple countries and regions around the world

- International exhibition participation: Participate in internationally recognized 3D printing technology exhibitions, such as Formnext, RAPID+TCT, etc., to showcase the latest products and technologies and expand overseas markets.
- Localized Marketing Strategy: Develop localized marketing strategies for the market characteristics of different countries and regions, including language translation, cultural adaptation, and local partner support.
- Online international marketing promotion: Utilize international advertising platforms such as Google Ads, Facebook Ads, etc. to make accurate placement and attract potential customers in target markets.

4. Demanding regions such as North America, Europe, Asia, etc.

- Regional agent training and support: Strengthen the training and support for regional agents, enhance their sales ability and service level, and jointly develop the market.
- Industry Summits and Seminars: Organize or participate in industry summits and seminars in regions with strong demand, establish connections with local enterprises and organizations, and promote M Company's products and services.

Successful Case Sharing: Organize and share successful cases in the region to enhance brand reputation and market share through customer testimonials and word-of-mouth communication.

5. China market (education, scientific research, industrial design, etc.)

- Education cooperation and sponsorship: Cooperate with universities, vocational colleges and other educational institutions to provide 3D printing equipment support, organize related courses and training, and cultivate professionals.

- Scientific research project support: actively participate in or sponsor scientific research projects of scientific research organizations, provide technical support and solutions, and demonstrate M's strength in the field of scientific research.
- Industrial Design Competition: Organize or sponsor industrial design competitions, encourage designers to use M Company's 3D printers to create, and increase brand exposure and market recognition.

6. Specialty stores/specialty markets for technology products

- On-site Experience and Demonstration: Set up an experience area in specialty stores or professional markets to provide on-site demonstration and experience services so that consumers can experience the performance and advantages of Company M's products.
- Joint Marketing Activities: Cooperate with specialty stores or professional markets to organize joint marketing activities, such as new product launches, technical exchanges, etc., to jointly attract customers' attention.
- Membership system and point rewards: establish a membership system to provide point rewards, exclusive offers and other benefits for regular customers to enhance customer loyalty and repurchase rate.

In order to show more clearly, the author made the following table

Table 4.7: M Company's promotional and marketing strategies for each segment

Market Segment	Promotion and Marketing Strategies
Large Enterprises & Research Institutions	1. Customized Solution Showcases 2. Industry Forums & Seminars 3. One-on-One Deep Dive Visits
Broad Consumer Base	1. Influencer Marketing 2. Social Media Marketing 3. Limited-Time Discounts & Promotions
Global Markets (Multiple Countries & Regions)	1. International Trade Show Exhibitions 2. Localized Marketing Strategies 3. Online International Marketing Campaigns
High-Demand Regions (North America, Europe, Asia, etc.)	1. Regional Distributor Training & Support 2. Industry Summits & Workshops 3. Success Story Sharing
Chinese Market (Education, Research, Industrial Design, etc.)	1. Educational Collaborations & Sponsorships 2. Research Project Support 3. Industrial Design Competitions
Tech Product Stores & Specialist Markets	1. Live Demonstrations & Hands-On Experience 2. Joint Marketing Activities 3. Membership Programs & Loyalty Rewards

Source：Author (2025)

4.8. Implementation

4.8.1. Schedule

Table4.8: Schedule of market work

Phase	Timeframe	Activities	Responsible Departments
Market Research	Apr - May 2025	- Conduct literature review on 3D printing market	Marketing Research Team
		- Perform competitor analysis	
		- Conduct consumer surveys and cluster analysis	
Market Segmentation & Positioning	Jun-25	- Segment target market into education, industrial, and individual creator segments	Market Strategy Team
		- Define Company M's market positioning as a "cost-effective and easy-to-use 3D printing solution provider"	
Product Development	Jul - Aug 2025	- Optimize product lines for different segments	Product Development Team
		- Introduce new features and technologies	
		- Ensure high-quality standards and compliance with regulations	
Marketing Strategy Development	Sep-25	- Develop marketing mix strategy (Product, Price, Place, Promotion)	Marketing Strategy Team
		- Formulate personalized marketing strategies for different customer segments	
Sales Channel Expansion	Oct - Nov 2025	- Expand online sales channels (e.g., Tmall, JD, Amazon)	Sales & Distribution Team
		- Strengthen offline sales through distributors, agents, and experience stores	
		- Develop international sales strategies	
Brand Building & Promotion	Dec 2025 - Jan 2026	- Implement brand building campaigns	Branding & Promotions Team
		- Utilize social media, influencers, and KOLs for promotion	
		- Organize industry events, seminars, and webinars	
Implementation & Monitoring	Feb - Mar 2026	- Roll out marketing and sales strategies	Entire Marketing Team
		- Monitor KPIs (Sales Revenue, Market Share, Customer Satisfaction, etc.)	
		- Conduct regular reviews and adjustments	
Evaluation & Feedback	Apr-26	- Evaluate the effectiveness of the market penetration and brand building strategies	Marketing Research Team & Strategy Team
		- Collect customer feedback and market data	
		- Prepare final report and recommendations for future strategies	

Source：Author (2025)

Table 4.9: Timetable of the Project

Project Schedule							
Market Segmentation & Positioning	1month						
Product Development		1month					
Marketing Strategy Development			1month				
Sales Channel Expansion				1month			
Brand Building & Promotion					1month		
Implementation & Monitoring						1month	
Evaluation & Feedback							1month

Source：Author (2025)

4.8.2. Budget

Table 4.10: Budget of the market

Serial No.	Action Item	Budget (RMB)
1	Market Research & Investigation	0
	- Competitor Analysis	0
	- Target Customer Research	0
	- Market Trend Forecasting	0
2	Marketing Goals & Strategy Formulation	100,000
	- Setting Marketing Goals	30,000
	- Developing Marketing Strategies	70,000
3	Content Creation & Preparation	800,000
	- Product Videos Production	300,000
	- Social Media Content Creation	200,000
	- Blog Posts Writing	150,000
	- Promotional Materials Design	150,000
4	Channel Layout & Optimization	600,000
	- Social Media Accounts Setup & Management	200,000
	- Website Content Update & SEO Optimization	250,000
	- Media Partnerships & KOL Collaborations	150,000
5	Marketing Campaign Execution	1,500,000
	- Product Launch Event	500,000
	- Limited-Time Discount Promotions	300,000
	- Social Media Challenges	200,000
	- Other Marketing Activities	500,000
6	Campaign Evaluation & Feedback Collection	150,000
	- Data Analysis & Report Writing	100,000
	- Customer Feedback Collection & Analysis	50,000
7	Strategy Adjustment & Optimization	50,000
	- Strategy Adjustment	30,000
	- Content & Channel Optimization	20,000
Total Annual Budget		**6,400,000**

Source: Author (2025)

4.8.3. Control and assessment

In the implementation part of Company M's marketing strategy, the control and evaluation aspects are crucial, they help to ensure that actions are carried out as planned and that the strategy is adjusted in time to achieve the desired objectives. The following are specific ways on how to control and evaluate the implementation of actions, including the setting of Key Performance Indicators (KPIs):

1. Control link

(1) Establish a monitoring mechanism

- Regular Progress Report: Require each executive department to submit regular project progress reports, including tasks completed, tasks in progress, problems encountered and solutions.
- Key Milestone Review: Set up key project milestones and review them at each milestone node to ensure that the project progresses as planned.

(2) Budget Control

- Budget tracking: Real-time tracking of the budget execution of each action to ensure that the budget limit is not exceeded.
- Cost-benefit analysis: analyse the costs and benefits of each action, adjust budget allocation in a timely manner, and improve the efficiency of resource use.

(3) Risk Management

- Risk identification and assessment: Identify potential market risks, technical risks, financial risks, etc. on a regular basis and conduct assessment.
- Risk Response Strategy: For the identified risks, formulate response strategies to reduce the impact of risks on the project.

2. Evaluation Segment

(1) Key Performance Indicators (KPIs) Setting

In order to evaluate the implementation effect of the marketing strategy, the following KPIs can be set:

Table 4.11: Key Performance Indicators Setting

KPI Name	Formula/Description
Sales Revenue	Total income generated from product sales over a specific period.
Sales Growth Rate	[(Current Sales - Previous Sales) / Previous Sales] * 100%
Market Share	[Company Sales / Total Market Sales] * 100%
New Customer Acquisition	[Number of New Customers / Total Customers] * 100%
Customer Satisfaction	Scores obtained from customer surveys and feedback.
Brand Awareness	Indicators of brand recognition from market research.
Marketing ROI	[(Sales Revenue - Marketing Expenses) / Marketing Expenses] * 100%
Channel Effectiveness	Metrics based on sales performance and partnership depth with channels.
Campaign Effectiveness	Metrics such as click-through rates, conversion rates, and engagement levels of marketing campaigns.

Source: Author (2025)

(2) Data collection and analysis

- Data sources: including sales data, market research data, customer feedback data, social media data, etc.
- Data analysis: Using statistical analysis, data mining and other methods, the collected data are analyzed in depth to reveal market trends, customer behaviour, marketing strategy effects, etc.

(3) Evaluation Report and Feedback

- Regular assessment report: Prepare regular assessment reports to summarize the implementation of marketing strategies, analyse existing problems and deficiencies, and put forward suggestions for improvement.
- Feedback mechanism: establish an effective feedback mechanism to feedback the assessment results to the relevant departments and personnel in a timely manner to promote the continuous improvement and adjustment of the strategy.

Through the implementation of the above control and evaluation links, Creative 3D can more accurately grasp the implementation of the marketing strategy, timely identify problems and take measures to solve them to ensure the effectiveness and sustainability of the marketing strategy.

5. Conclusions

After decades of technical accumulation and development, 3D printing technology has gradually matured. In recent years, under the active guidance of national policies, China's 3D printing industry has ushered in an opportunity for rapid development. However, due to the late start, China's 3D printing enterprises still lag behind developed countries in terms of technical strength and market competitiveness, facing fierce market competition from foreign brands. In this context, China's 3D printer enterprises urgently need to break through the market dilemma through innovative marketing strategies to achieve sustainable development.

This project integrates a variety of research methods such as literature review, market research, competitor analysis, etc., and combines the marketing theories such as STP theory and 4P theory to formulate a comprehensive and in-depth marketing strategy for M Company. Through questionnaire survey and cluster analysis, we successfully constructed three-dimensional and multi-dimensional customer profiles, which provide strong support for Company M to deeply understand the market dynamics, optimize the product portfolio and formulate personalized marketing strategies.

During the development of the marketing strategy, we paid special attention to the expanded focus on customer acquisition and retention as well as brand building. In response to the specific needs of the educational, industrial and individual creator markets, we proposed differentiated marketing strategies, including precise product positioning, flexible pricing strategies, diversified channel choices and innovative promotional tactics. These strategies are designed to help M better meet customer needs and enhance customer satisfaction and loyalty, thus effectively acquiring and retaining customers. We also attach great importance to the role of brand building in enhancing Company M's market competitiveness. By strengthening brand publicity and promotion and enhancing brand awareness and reputation, Company M is expected to stand out in the fierce market competition and establish a distinctive brand image.

The main results of this project include: a detailed analysis of the market value, growth rate, and regional sales of Company M's 3D printers, which clarifies its position and competitive advantages in the market; an all-round analysis of its competitors, which reveals the intensity of market competition and the strengths and weaknesses of its competitors; suggestions for differentiated marketing strategies to address specific market demands; and the setting of KPIs, such such as market share growth rate, brand awareness enhancement rate and revenue growth rate, to assess the effectiveness of the marketing strategy implementation.

However, some limitations have been identified in the course of this project. The timeliness of the analyzed results may be limited due to the constant changes in the market

environment and consumer demands. Also, due to the complexity of data collection and analysis, it may not be possible to cover all relevant market information and competitor situations. Therefore, when formulating its marketing strategy, Company M needs to fully consider these limitations and make flexible adjustments in light of the actual situation.

In order to further improve the marketing strategy of Company M's 3D printers, we recommend that the company continuously conducts in-depth research on consumer demand and market trends to understand consumers' individual needs and the dynamics of market changes. At the same time, it should strengthen the comparative analysis with competitors, explore new marketing channels and promotional means, and continuously improve brand awareness and market share. In addition, Company M should also strengthen co-operation and communication with other industries to expand its business scope and market space to meet future market challenges. Through these efforts, Company M is expected to achieve substantial sales growth, significant market share expansion and consolidate its leading position in the 3D printing industry amidst fierce market competition.

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Appendices

Appendix A—Creative 3D High-Speed 3D Printer Consumer Market Survey

Greetings! I am a postgraduate student of Applied Management at ISCTE Business School, and I am conducting a survey on the consumer market for the Genesis 3D high-speed 3D printer, and I would like to send you this questionnaire. Please fill in the questionnaire according to the real situation, I solemnly promise that the information you fill in is purely for academic research and will never be made public.

Sincerely look forward to your strong support for my research, thank you for your valuable time to participate in this questionnaire!

March 10, 2025

1. Your gender

A:Male B:Female

2. Your age:

A: 15~20 years old

B: 20~30 years old

C: 30~40 years old

D: Above 40 years old

3. Your occupation:

A: Scholar

B: Office worker

C: Entrepreneur

D：Freelancer

E：Other

4.Your monthly income:

A：Below 8000 yuan

B：8000-16000 yuan

C：16000-240000 yuan

D：More than 24000 yuan

5. How much do you know about 3D printing technology, choose the following options:

A.Very little understanding

B.No understanding

C.General

D.Understand

E.Very well informed

6. What are the most important features or characteristics you look for when choosing a 3D printer? (Multiple choices allowed)

A.Printing accuracy

B.Printing speed

C.Material compatibility

D.Software ease of use

E.Portability/Size

F.After-sales service

G. Other, please specify: _____

7. Compared with other brands, why do you use our products? (Multiple choice)

A. Product price

B. Quality and performance

C. Promotion strategy

D. Technical service

E. Brand reputation

F. Others

8. If you want to buy a desktop 3D printer, what is the psychological price you can accept?

A: Less than 3,000 yuan

B: 3000-5000 yuan

C: 5000-10000 yuan

D：10000-15000 yuan

E：More than 15000RMB

9. Regarding the product prices on and offline, which one do you think has higher price transparency?

A: Online price transparency is high

B: Offline price transparency is high

10. Have you ever heard of Creative 3D printer?

A: Yes

B: No

11. In the last three months have you seen the advertisement of Creative 3D brand 3D printer?

A: Yes

B: No

12. If you want to buy Creative 3D 3D printer, what kind of way will you choose to buy?

A. Online e-commerce platform (such as Taobao, Jingdong)

B. Offline physical stores

C. Professional forums/communities

D. Recommended by friends/colleagues

E.Social media advertising

F.Others, please specify: _____

13. Compared with the quality and after-sale service of the goods purchased from online and physical stores, which one do you think is more reliable?

is higher?

A: Reliable online

B: Reliable in physical stores

14. Considering the technological innovation and added value of the new printers, are you willing to accept paying a little more expensive than traditional printers?

A. Cannot accept at all

B.Unacceptable

C.Doesn't matter

D.Acceptable

E.Acceptable

15. If you buy a 3D printer, what is its purpose?

A.Purely commercial

B.Purely for home use

C.Half for commercial and half for domestic use

D.Mostly commercial, a small part of the home

E. Mostly for home use, a small part of commercial use

16. Do you think brand image building is more favorable to 3D printer sales?

A: Favorable

B: Unfavorable

C: Not sure

17. Does the size of the promotion and your willingness to buy have a direct impact?

A. Very direct impact: the greater the promotional efforts, the more likely I am to buy.

B. A big influence: the promotion is an important factor for me to consider purchasing.

C. Some influence: The strength of the promotion will slightly increase my willingness to buy, but it is not decisive.

D. Little influence: the strength of the promotion has limited influence on my purchasing decision.

E. Almost no influence

18.Which kind of promotion do you prefer to attract you to buy a 3D printer? (Multiple choices allowed)

A.Direct price reduction

B.Free gifts/accessory packages

C.Limited time discount

D.Bundled sales (e.g. software/courses)

E.Social media ads/KOL recommendations

F.Free trial/experience activities

G.Other, please specify: _____

19.Based on the information so far, how willing are you to buy the new 3D printer from Creative 3D?

A.Not at all

B.Not very willing

C.Generally

D.Quite willing

E.Very willing

20. Would you like to receive customized promotional information based on your personal interests or purchase history?

A.Not at all

B.Not at all

C.Don't care

D.Quite hopeful

E.Very much