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Business Model Construction Processes and Mechanisms of Start-ups in Nascent Markets - A Multiple Case Study Based on Multi-cases Analysis

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Doctor of Management

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BUSINESS
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Declaration

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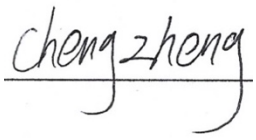

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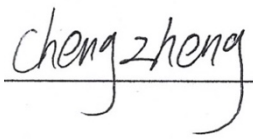

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Abstract

Understanding how to build business models for startups in nascent markets is a significant issue that has increasingly called the attention of both scholars and practitioners. Most of the existing studies focus on the business models of mature enterprises in traditional stings, but little research has been conducted on the business model mechanisms of startups in nascent markets. To fill this gap, this thesis uses multi-case study from entrepreneurship and the entrepreneurial process, and data collected through in-depth interviews with entrepreneurs of three Chinese nascent Internet start-ups, summarizing and refining six main theoretical categories: entrepreneurial cognitive schema, cognitive model, cognitive flexibility, interaction stage, and business model results. Our findings suggest that entrepreneurs' business model constructs have a subjective component, and the variability of entrepreneurial cognition explains why entrepreneurs under conditions of experience and network disadvantage achieve even better entrepreneurial outcomes. The construction of business models for startups in nascent markets requires a dynamic perspective to grasp the intrinsic mechanisms of business model generation at a deeper level and at the same time providing feasible practical guidance for innovative startups in nascent markets. Overall, our model provides a contribution to support business model construction of startups in China.

Keywords: Multiple Case studies, Start-ups, Business Model Building
JEL: M13, M31

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Resumo

Compreender como construir modelos de negócios para *startups* em mercados emergentes é uma problemática importante que tem chamado cada vez mais a atenção de académicos e profissionais. A maioria dos estudos existentes concentra-se nos modelos de negócios de empresas maduras em mercados tradicionais, mas poucas pesquisas foram realizadas sobre os mecanismos do modelo de negócios de *startups* em mercados emergentes. Para preencher esta lacuna, esta tese utiliza estudos de caso múltiplos de empreendedorismo e processo empreendedor bem como dados coletados por entrevista estruturada com empreendedores de três *startups* chinesas de negócios *online*, resumindo e refinando seis categorias teóricas principais: esquema cognitivo empreendedor, modelo cognitivo, flexibilidade cognitiva, estádio de interação e resultados do modelo de negócios. As nossas descobertas sugerem que os construtos do modelo de negócio destes empreendedores têm uma componente subjetiva e a variabilidade da cognição empreendedora explica porque razão os empreendedores sob condições de experiência e desvantagem de rede alcançam resultados empresariais ainda melhores. A construção de modelos de negócios para *startups* em mercados emergentes requer uma perspetiva dinâmica para se compreender os mecanismos intrínsecos de geração de modelos de negócios a um nível mais profundo e, ao mesmo tempo, para fornecer uma orientação prática viável para *startups* inovadoras em mercados emergentes. Globalmente, o nosso modelo fornece uma contribuição para apoiar a construção do modelo de negócios de startups na China.

Palavras-chave: Casos de estudo múltiplos, Startups, Construção de modelos de negócio
JEL: M13, M31

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摘要

初生市场中新创企业商业模式的建构对中国这样的新兴市场无疑太重要。中国数字经济转型背景下，新创企业的发展起到了增加就业、推进技术进步和促进经济发展的作用。现有的研究大多集中在传统商业在位企业的商业模式，针对初生市场新创企业这一独特的研究对象较少；尤其在初生市场中的新创企业这一情境上，新创企业创业过程的动态复杂性，有必要用新的研究方法研究新创企业商业模式建构问题。本论文基于多案例研究方法，对新企业从创立到商业模式确立的过程做出进一步探究，以丰富和发展新企业商业模式建构过程的理论，以6家新创企业商业模式实践的企业原型为样本，通过对新创企业相关人员的深度访谈获取充分的现场数据信息。采用三级编码方法：开放式编码、主轴编码和选择性编码对访谈资料进行分析提取深入发掘出新创企业商业模式建构过程的概念内涵与维度结构。

我们的研究结果表明，管理认知转变通过影响战略试验最终主导企业商业模式结果，而且管理认知转变的不同维度影响了企业的不同战略试验的活动，从而最后决定了企业商业模式建构并且新创企业商业模式要素呈简约化模型：市场定位，经营过程，利润模型。我们的模型为支持中国初创企业的商业模式建设提供了贡献。对新企业从创立到商业模式确立的过程与机理做出进一步探究，以丰富和发展新创企业商业模式建构过程的理论。

关键词：多案例研究，新创企业，商业模式建构

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在葡萄牙里斯本大学与成都电子科技大学攻读博士学位四年多的时间是本人终身难忘的记忆，苦乐酸甜自知，千回百转临近毕业，告一段落，感触颇深，在学习与研究的过程中，本人得到多方的耐心指导与帮助，由衷的感激。

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Chapter 1: Introduction

1.1 Research background

In the context of China's digital economy transformation, start-ups are an important part of China's economic development and undoubtedly the most important driver of a region's and even a country's economic development. Start-ups, as a variable in the aspects of society, life, and economy, play a crucial role in changing the structure of the industry, promoting productivity, and enhancing economic development. On June 13, 2019, SSE STAR MARKET (Sci-Tech innovation board) was launched in Shanghai, representing China's active promotion of emerging industries and a new wave of those industries. However, today inventing brand-new technology or material becomes more and more difficult. It can be seen that the vast majority of companies are unique in innovating business models and customer experience. For start-ups, searching for a scalable, repeatable, and profitable business model is extremely valuable, and its development and practice are directly related to the survival and progress of the companies.

1.1.1 Status quo

Many research indicates that the success of a start-up company is the success of the business model selection and design built by the entrepreneur, which can continue to develop and grow through the founding phase to achieve business success. The creation of business models for startups is a dynamic and evolving process. Building a company is never easy in any country. In China, the success rate was quite high due to the less restricted market in the early reform and opening years. In the 21st century, the rate has been declining yearly. According to statistics from authoritative institutions, the survival rate of Chinese entrepreneurs, mainly small and micro enterprises, is less than 3 years, only 2.9 years. Especially with the formation of industry-academia-research value networks and the accelerated pace of globalization, it is not easy for Chinese start-ups to stand out today. Even though there is always a chance to secure venture capital funds, the competition is fierce. In addition, emerging market investors tend to have a risk-averse bias toward investing in new companies and prefer those companies that have already reached the later developmental stages and become more mature. Start-ups suffer from

0 to 1, lack of strategies of market entry, which all show an immature nascent market environment. Therefore, in the absence of various resources, the business model of a start-up is unclear, and it is difficult to form its business model to develop. To form a business model for all start-ups faces many difficulties.

1.1.2 Theoretical background

In recent years, business model research has gradually shifted from the initial identification of elements to a more in-depth study of process mechanisms (Li et al., 2017). In the Internet tide, the dynamic changes in the internal and external environment of enterprises are greater, and many start-ups have experienced one or even more rounds of business model adjustment in a short period, and the business model adjustment of start-ups is beginning to interest the researchers. Business model alignment research can be traced back to three different theory views--The Rational Positioning View, The Evolutionary View, and The Cognitive View). The three schools of thought have different research perspectives on business model adjustment and hold different views. The understanding of how business models form and evolve is still unclear, and there is not much research on business model adaption so there is a lack of consensus among different studies. Specifically, while existing research recognizes that the emergence of new business models is a trial-and-error process and an adjustment process, no corresponding adjustment process model has been established, and the adjustment process remains ambiguous. Although a dualistic business model adaptation model is proposed, the main factors that cause changes in the two types of business model adaptation and their relationships are not explored in depth； In addition, the dynamic complexity of the start-up process, especially in the context of start-ups in nascent markets, necessitates the use of new research methods to study the business model constructs of start-ups. Overall, research on business model adjustment hardly can give practical guidance on the dynamic design and adjustment of business models for start-ups so it is necessary to explore and refine the underlying mechanism of the business model construction process of start-ups in nascent markets at a deeper level, strengthening the research on the “ephemeral, contextual and holistic” nature of enterprise practice field. From this aspect, the context of this thesis is in the fast-changing, information technology-supported digital economy science and innovation enterprise. In the context of “China's transformation into a digital economy”, this thesis is based on a multi-case study analysis of six local Chinese start-ups, conducting theoretical constructs and generalizing conclusions based on the on-site, case-based resource. A multi-case study approach to analyzing constructs is more likely to produce

innovative and accurate insights than relying on existing research or sitting in an office and conducting thought experiments, which reflects hope for providing insights on building business models for start-ups in nascent markets.

1.2 Statement of the problem

This study reveals the process and mechanism of business model construction for start-ups in nascent markets and also indicates the method, purpose, and timing for the start-ups to construct business models that fit their needs.

All companies, whether implicit or explicit, adopt a specific business model of their own, which must be practiced to meet specific market and customer needs. It must also be inimitable in some way, either because it disrupts relationships with suppliers, key partners, and existing customers, or because it is difficult for competitors to replicate. It is also difficult for competitors to replicate their business models for other reasons. There may be arrangements and organizational structures that prevent the implementation of the new business model, or there may be strong intellectual property protection or complex step-by-step process. Excellent business model design and implementation include assessing external and internal factors related to users, suppliers, customers, upstream and downstream partners, and the broader business environment. The construction of a business model for a start-up in a nascent market can come from a number of potential factors. A business model is a business idea that has been put into practice, while a business idea is an idea or concept that exists in the mind of the operator about how to do business and how to meet customer needs. What business model pioneers usually develop covers the following several areas-the basic needs of the market, improved techniques of organizational possibilities, development trajectories, and how competitors do not meet or satisfy these needs. However, in almost every case, new business models for start-ups succeed only after extensive and repeated market testing.

If the business model construct is faulty, the company has little chance of commercial success. Opportunity is the potential to provide higher value by creatively combining resources to meet market demand . Constructing the business model accurately, establishing inimitable dimensions, and tailoring it to the market sector will help start-ups gain a competitive advantage. A business model cannot be evaluated in the abstract; its applicability can only be determined based on industry upstream and downstream or a specific business environment. On one hand, organizational structures, business models, and start-up strategies are unlikely to be properly calibrated without an assessment of the start-up environment. On the other hand, the

entrepreneurial environment itself is to some extent a selection variable; that is, entrepreneurs can be selected by the entrepreneurial environment, or they can select an entrepreneurial environment, and they can also shape their entrepreneurial environment and entrepreneurial ecology. In any industry, there are some criteria by which entrepreneurs can judge whether they have designed a good business model. A properly designed business model for a start-up will generate and deliver a service or product that will present a customer value proposition and achieve a favorable risk structure and cost; discovering, implementing, and optimizing a viable cost structure and revenue for the start-up is critical to its commercial success. This is essential when a start-up is in its infancy, but it can also be an ongoing entrepreneurial task for the entrepreneur to keep the business model viable. Superior excellence in people, products, and technology, good leadership, and corporate governance cannot generate sustainable profitability if the business model construct is not properly adapted to the competitive environment. The pioneers are those who have a deep understanding of the industry and who can find out what customers want and devise better business methods to meet them, and build sustainable organizational operations to meet those customer needs, are pioneers in the nascent market. They may not use new technologies; however, they must understand market needs, customer demands, organizational logic, and technical possibilities. In other words, the business model articulates the “industry logic” or underlying business of a start-up's strategy to move to a nascent market. Once articulated, it is likely that the business logic will have to be tested and iterated and adapted to make the evidence for the entrepreneur's assumptions clearer. In the real world, therefore, entrepreneurs and top executives must carefully consider the design of a start-up's business model, even as they repeatedly execute deals that validate what is not yet possible in the marketplace. Also, a business model pioneered by a start-up in one area may be adopted by another company in another area. For example, the model of “freemium” practiced by Flicker is applied to Outshouting as a multi-revenue stream model to online web video, allowing users to personalize the distribution of videos for personal purposes or commercial use While this is common among Internet startups, in some cases the nascent market may not even exist. So, it is critical for startups to have a business model structure that is hard to imitate, differentiated, yet efficient in a startup environment where the nascent market is ambiguous.

The purpose of this thesis is to reveal the mechanism of business model construction for start-ups in nascent markets, and how, why, and when start-ups in nascent markets construct a business model that fits their needs. Meanwhile, this thesis will explore how start-ups in nascent markets build their business models, with a particular focus on how the original business model

evolves to clarify the organization's position, business logic, and business development under the constraints of technology, human resources, and high market uncertainty.

1.3 Presentation of the study

The study is presented in the following 6-chapter format.

Chapter 1 Introduction. This chapter aims to clarify the practical and theoretical background of the study, specify the process and mechanism of business model construction of start-ups in nascent markets, and elaborate on the structural arrangement, technical lines, and research methods.

Chapter 2 Definition and Literature review. This chapter will define and systematically review the concepts and literature related to start-ups and business models in both domestic and international markets. Also, this chapter will clarify the relationship between this thesis and the existing concepts based on a holistic grasp of the above-mentioned theoretical development, current research status and frontier dynamics, and to find the entry point of this study, to lay a theoretical foundation for the study of the business model construction and mechanism of start-up enterprises in the nascent market.

Chapter 3 Research method and subject description. Chapter 3 describes the method used in the data collection, including the case selection process, case company introduction, data collection process, analysis strategy and process, reliability, and validity.

Chapter 4 Based on a multi-case study analysis process. Open-ended, spindle-based, selective coding of data material collected from the cases.

Chapter 5 Findings. This chapter shows the process and mechanistic model of business model construction for start-ups in nascent markets based on multiple Case Studies.

Chapter 6 Conclusion. This chapter aims to summarize the important findings of this thesis and further elaborate the relationship between them and theories, and to describe the theoretical contributions and management insights of the thesis's findings; to analyze the shortcomings of the research and the directions for improvement and further in-depth research, and to provide references for subsequent research in this field.

1.4 Implication

This study integrates the business model construction process of start-ups under different scenarios from the start-up entrepreneurial process, to construct a conceptual model with more

refined elements and a more comprehensive explanation of the generative mechanism of business model construction for start-ups in nascent markets.

1.4.1 Theoretical implications

The purpose of this thesis is to explore the process of business model construction and the mechanism of business model construction of start-ups in nascent markets through specific case observations, to adapt to the context of China's digital economic transformation and to consider how start-ups construct their business models, which helps to explain the formation of business models of start-ups from a dynamic perspective of the entrepreneurial process and to promote the contextualization of the theoretical construction. Based on the multiple case studies, the researcher explores the business model construction logic of start-ups from the overall perspective of the entrepreneurial process activities of start-ups in the nascent market. This thesis selects six Chinese mobile Internet technology start-ups in the nascent market as case subjects explore the mechanisms of business model evolution driven by start-ups from the entrepreneurial process, and reveals the process and evolution mechanism of business model construction of start-ups in the nascent market. This construction path originates from the practice process of start-up entrepreneurs, which breaks through the existing static canvas of business model, and has certain reference value for the theory and practice of business model construction, with strong operability, to present the complete construction process and mechanism effect of the business model of start-up enterprises in the nascent market. Moreover, this study provides a general business model for start-ups in different areas, and shed light on the design and construction of business models of start-ups in the nascent market, as well as a basis for a further study of the business model mechanism of start-ups and a theoretical guide for start-ups in the process of business model construction.

1.4.2 Practical implication

The construction of business models for start-ups in nascent markets is undoubtedly important for emerging markets like China. The development of start-ups plays a role in increasing employment, advancing technological progress, and promoting economic development. To cope with the emerging industries and the fourth industrial revolution, as well as the great challenge of industrial restructuring and upgrading faced by the global economy, countries around the world have formulated relevant policies to promote the development of the new economy. For example, China transforms into a digital economy; the U.S. proposes the

“National Advanced Manufacturing Strategic Plan” to promote technological innovation through advanced manufacturing, emphasizing the strategic core of advanced manufacture; Germany has introduced and implemented the “Industry 4.0” strategic plan. In addition, the Made in China 2025 strategy clarifies the strategy of manufacturing power, explores the platform, intelligent and ecological business model in the new economic environment. New start-ups have become a factor of change in society, life, and the economy, playing a key role in changing the industrial structure and economic development dynamics and promoting productivity. Therefore, in the face of the complex and changing economic environment, it is of great practical significance to analyze the technology R&D model, organizational model, channel model, and customer model of start-ups in nascent markets, and to propose the mechanism of business model realization for start-ups in nascent markets. Especially with the rapid development of globalization and the formation of industrial value networks, startups in nascent markets have some natural disadvantages in terms of entrepreneurship. With the uncertain customer needs of product or service innovation, exploring and building a scalable, repeatable and profitable business model is a key task in the early stages of a new venture . Competition in China's mobile Internet industry has intensified, with existing platform giants monopolizing most of the market and integrating related industries across borders. As start-ups face competition from giants and inherent disadvantages, this study provides guidance for start-ups to effectively cope with the high level of uncertainty in the environment to build their business models in the context of China's transforming digital economy.

1.5 Method

This thesis focuses on “the process and mechanism of business model construction for start-ups in nascent markets”, and uses multiple case studies to collect, analyze and summarize start-ups in the context of China's transition to a digital economy. Six case companies were finally selected as the primary source for this study, and then analyzed by multiple case studies. There are two main pieces of evidences. First, this research question requires the interpretation of both “how start-ups build a business model” and the micro-dynamic examination of the business model building process of start-ups. Case studies are a thorough and complete research strategy that is very effective for understanding the “how” and “why” questions. Second, this study expects to explore the business model construction process behind the entrepreneurial actions of start-ups in nascent markets that have not been effectively explained by existing theories. The multiple case studies are suitable for this study because it refines, build and develops new

theories from practice . In addition, compared with statistical analysis methods, multiple case studies based on case data can not only explore the dynamic process of management practice more deeply, but also help reveal the complex factors of its mechanism.

This study expects to examine the process of business model construction for start-ups in nascent markets and present the main mechanisms of business model adjustment as a whole to reveal the deep-seated reasons behind the phenomenon. For this purpose, this thesis adopts an exploratory multi-case study. Multi-case studies can be based on case studies, and all cases can be compared and analyzed to confirm common features and abandon unique features to form conclusions, thus ensuring strong generalizability of research findings. Specifically, a multi-case study design is carried out using "replication logic", in which a set of cases is treated as a series of experiments, and each case is used to prove alive and disprove a set of observed conclusions .

Given the exploratory nature of this study, in-depth interviews were conducted with the case companies, and only by getting up close and personal with the start-up entrepreneurs could the researcher truly understand, gain insight and appreciation of the various key decisions, activities and events that went into the construction of the business model with their development start-ups. Therefore, a research method based on face-to-face in-depth interviews is particularly necessary. On the one hand, the process of business modeling for start-ups requires a rich historical and real-life data to link decisions, actions and events at different points in time, to discover and confirm the possible cause-and-effect relationships between them, and to distill the patterns behind the phenomenon of business modeling for start-ups in a scientific way to form an enlightening middle-level theory derived from the data. On the other hand, it is possible to collect a large amount of rich and informative primary data for the theoretical exploration of business model construction mechanism, which makes it possible to discover the real story of how Chinese start-up entrepreneurs think and act; field-based research is an effective data collection method for different types of qualitative research by involving the researcher in the field. The purpose of this thesis is to uncover the process and mechanism of business model construction for start-ups in nascent markets, and it is more appropriate to use this approach to collect materials. As the research question in this work is an exploratory one, the first round of interviews was loosely structured as a guided investigation to obtain some key information and was designed as semi-structured focused questions to obtain more in-depth first-hand information. Investigating the business model formation of startups in nascent markets requires considerable problem awareness on the part of the researcher, by which is meant a high degree of sensitivity to the subject of investigation.

This thesis studies the process and mechanism of business model construction of start-ups in the nascent market, taking the mobile Internet era technology industry as the background. As there is no mature business model in China, foreign business models in this industry are not perfect and cannot be copied completely, so new start-ups are trying to build their own business models in practice. Second, the rapid development of mobile Internet technology in China, coupled with the rapid changes in the external environment, the business models of such start-ups are adjusted relatively frequently and there is material for analysis. Third, since the industry is dominated by start-ups, being able to trace the information from the beginning of the start-ups' establishment can avoid information omission and ensure the integrity of information.

For the number of multiple case studies, Eisenhardt believes that the most appropriate number of cases in a multiple case study is 4-8 . In addition, the selection of cases should take into account both the accessibility of information and the representativeness of the company in order to improve the accuracy of the sample information and reasonably reduce costs. Yin believes that the number of multi-case studies should be 6-10. In this thesis, six companies were selected as case study samples .

In summary, a multi-case analysis approach based on case data not only provides deeper insight into the dynamic processes of management practices, but also helps to reveal the complex mechanisms of influence.

1.6 Technical roadmap

Multi-case analysis method is an analytical process of constantly transforming materials into concepts, thinking, comparing, and discerning in order to establish theories. This study followed the steps of coding qualitative information in the case study for data collation and coding, and the process is outlined below:

The first step was the data organization process. The interview data, archival data, and secondary data sources were sorted out. The data that were not closely related to the research topic were first reduced. The case files were formed on the basis of the reduced data, and the researcher carried out coding on them. Secondly, the coding was done in stages, divided into open coding, axial coding and selective coding to work sequentially and form theories through the analysis process of data splitting and conceptual integration.

The open coding exercise focuses on mining the data verbatim and labeling as many different categories as possible. In this process, the researcher develops a unified understanding of the uncertainties through discussion and analysis to ensure that the goal of open coding is

achieved as much as possible. Some of the key constructs were mined with the help of existing literature, and some concepts were extracted from the data material based on its own information analysis.

The main work of the researcher in the process of axial coding is to think about the relationship of different conceptual categories to other categories, to combine different concepts in order to provide a more precise or complex explanation of the formation of phenomena, and in the process gradually form different categories.

In the selective coding process, the researcher defines and selects core concepts, focuses on analyzing the relationship between these core concepts and other categories of the classification, and realizes the integration and theoretical refinement between the concepts. In this stage, the researcher simultaneously compares the obtained data with the existing research literature iteratively and continuously, from which the relationships between the core categories and other categories are summarized and logical reasoning is carried out to ensure that the relevant propositions proposed are as innovative and logical and rational as possible.

This study uses multi-cases analysis method to analyze six cases, which is dictated by both the characteristics of start-up activities and the characteristics of the multi-cases analysis method. The characteristics and nature of start-ups in China's nascent market are changing all the time, and there is no established theory to draw from existing research. Therefore, the process and mechanism of business model construction for start-ups in nascent markets can be generalized from the entrepreneurs' entrepreneurial activities. The technical roadmap is shown in Figure 1.1.

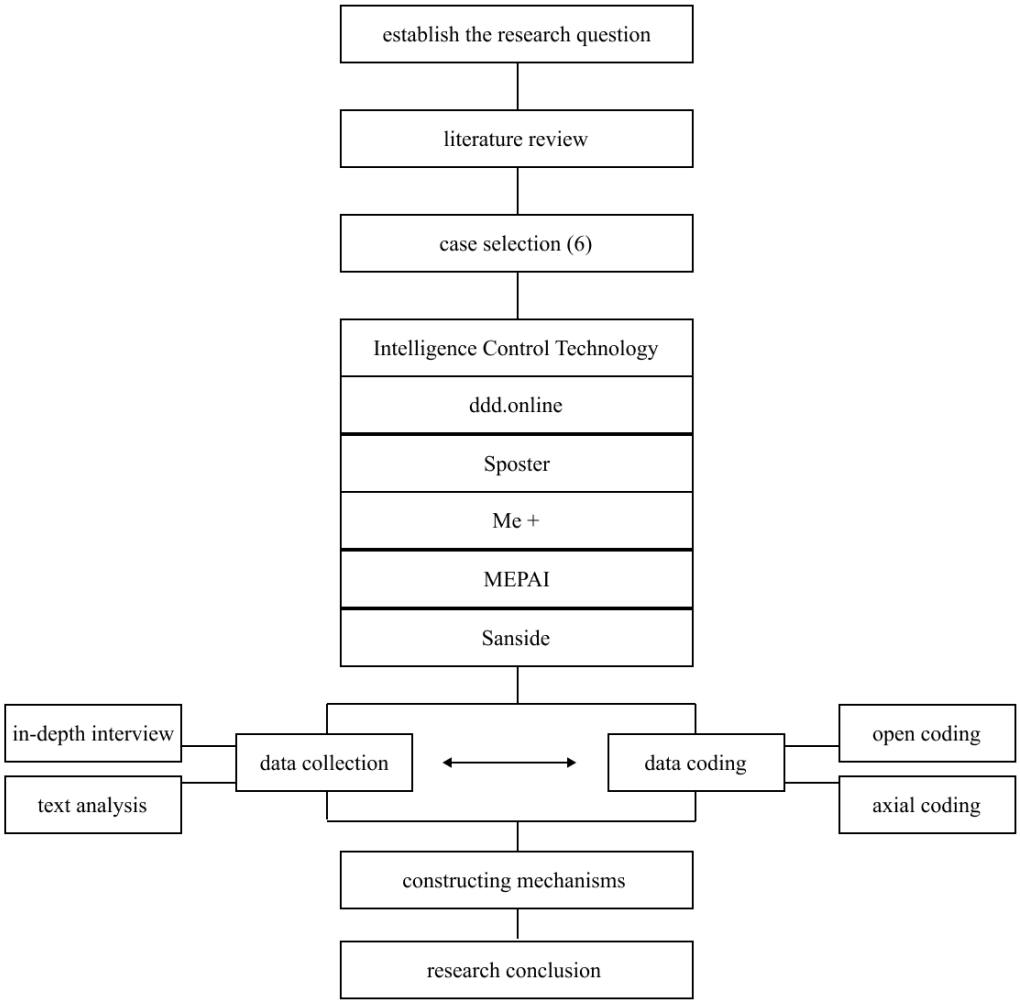

Figure 1.1 Research design

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Chapter 2: Literature Review

2.1 Research on business models

According to Shafer et al., business models, in reality, may play an important and constructive role in company management .

Start-ups can fail even when they have a market opportunity, a novel business idea, adequate resources and talented entrepreneurs. One possible reason for this is that the underlying model that drives the business is responsible for the outcome. The current situation is that the concept of business model is frequently and confusingly used in the real world, even confusing business model with network model and business model, while researchers seldom pay attention to business model, and if they do, they tend to focus on "network-based model", and there is no consensus on the essence and definition of business model. Dorantes-Gonzalez points out that current templates do not clearly incorporate innovation measurements, no problem/opportunity formulation, intellectual property, or even basic business model principles such as the profit formula (Dorantes-Gonzalez, 2017).

According to Guan, rising market competitiveness is also a key route for companies to foster corporate innovation . The rise and fall of the Internet economy at the end of the 20th century and the bursting of the Internet bubble have made business models criticized repeatedly, but have not been able to hide the fact that companies such as Dell, Southwest Airlines, Yahoo, eBay, Fed Ex. relied on their unique business models to start up and achieve great success. The fact that Dell, Southwest Airlines, Yahoo! as a result, the understanding of business models has begun to move beyond e-commerce companies to general enterprises, and the issues studied have become more general.

How start-ups adapt to the external environment has been at the forefront of the theoretical debate, Magretta, states that the business model is to some extent an art (Magretta, 2002). The probability of a successful business model is much higher when top management and entrepreneurs have a deep understanding of user needs, a comprehensive analysis of the value chain considering multiple options so they understand how to deliver what customers want in a timely and cost-effective manner, adopt a relatively efficient and neutral viewpoint for validation, and are good at learning and listening quickly. Include various market studies that provide insight into users, and elements that profit from the innovation framework, such as intellectual property regimes, innovation cycles, complementary assets and appropriate systems.

Zott et al. state that business models are of great value to start-ups and affect the survival of the firm (Zott et al., 2011). According to Rita Gunther McGrath, recognizing that more innovative business models are possible and executable than ever before is providing enterprises with unprecedented opportunity (McGrath, 2010).

Teece et al. refer to business model selection/design as a key micro-foundation of dynamic capabilities, dynamic functions that help manage evolutionary adaptation and help shape the business environment itself. To keep pace with changing markets, firms must have the skills to sense, capture and reconfigure, which not only enable them to remain dynamic, but also to shape and adapt to the changing business environment .

Harreld suggests that in order to protect any competitive advantage resulting from the design and implementation of a new business model, it is important to combine business model analysis with strategic analysis; selecting a business strategy is a more detailed exercise than designing a business model.

Yi et al. demonstrate how focused value proposition business model changes are conceived, articulated, and implemented . P. Liu discusses the adoption of Internet+ business model innovation by start-ups. The start-ups make full use of advanced information technology and network technology, which are continuously integrated with the industry, to achieve further optimization and development of information resources.

Morris et al., through a content analysis of more than 30 keywords in the definition of business models, stated that the definition of business models can be divided into three categories, namely strategic, economic, and operational. Relevant variables include vision, value creation, differentiation, and value networks (Morris et al., 2005).

Business model innovation, according to X. Luo et al., is a critical driver of developing market firm growth . Business model innovation, according to C. Zhang et al., focuses on the unique notion of value creation rather than value appropriation, and diverse business models may be used to produce value for certain market segments. Business model innovation's strategic potential rests in uncovering new sources of value creation based on innovations in the various components of a business model and/or the relationships between these components .

Various business models are emerging, and many new industries with new business models may challenge many traditional industries. In the face of such an environment, large and small enterprises are trapped in a situation of both opportunities and challenges, whether to rebirth and reinvent themselves in the challenge or to stick to the rules and eventually be eliminated.

These business models are primarily used to provide business managers with tools for integrated analysis and thinking, to prevent omissions in business model construction, and to

form a cognitive framework for business systems, which Osterwalder defines as a set of conceptual objects that include a set of elements and the relationships between them.

According to Giesen et al, the following three criteria were discovered to be crucial to the effective design and implementation of business model innovation by researchers: Aligned - Leverage core competencies and design consistency across all elements of the business model that produce customer value, both internally and externally (Giesen et al., 2010). Analytical - Use data to build foresight and prioritize activities while measuring and tracking progress for quick course adjustment; and Adaptable - Combine inventive leadership with the capacity to implement change and operational flexibility . According to Fang, inclusive leaders who exhibit openness, accessibility, and availability have a favorable impact on business model innovation and boundary-spanning exploration; openness and accessibility have a greater impact on business model innovation and boundary-spanning exploration . Business model innovation, according to Z. Wang and Zhou, has a favorable impact on social enterprise performance and an organization's legitimacy, functioning as a partial mediator between them . The findings of Zheng et al. show the relevance of stakeholders sharing knowledge and methods for entrepreneurs to manage innovation from the standpoint of investment .

According to Johnson et al., every successful firm already follows a well-defined business model. Executives can comprehend how the model satisfies a compelling value proposition in a lucrative way using specific key resources and key processes by carefully identifying all of its constituent pieces . They may then assess how successfully the same model might be utilized to fulfill a fundamentally different Customer Value Proposition-and, if necessary, what they need to do to build a new one to take advantage of that opportunity.

To sum up, we can find that business model is a multi-level and multi-faceted concept from different scholars' perspectives and different descriptions from different fields. From the financial perspective, business model is a means to create economic value and maintain the development of the enterprise; from the perspective of the essential attributes of business model, it highlights the role of business model in value proposition, value network, value creation and value maintenance; from the perspective of system, business model is regarded as a system composed of some variables; through the above sorting, as we can see from the above, the existing research on business model construction not only tends to be "scientific", but also has more practical relevance than superficial analysis, and more often studies the incumbent enterprises. How to develop a scientific and practical guidance on the process and mechanism of business model building for start-ups in nascent markets is the focus of this thesis. In this thesis, by further reviewing the literature as follows, the authors include the germination of

business models, the nature of business models, the components of business models, the theory underlying the construction of business models, the motivation of business model adjustment, the literature related to the study of the process of business model construction, and study on business model adaptation of start-ups from different perspectives.

2.1.1 Creativity is the germ of a business model

From the perspective of entrepreneurship research, the perception of the initial business model is based on a set of assumptions and is not so much a business model for the firm as it is an idea for the entrepreneur, nothing more than some unrealized business model idea. Business ideas come from the enrichment and localization of opportunities that eventually evolve into business models. Opportunity is the possibility of delivering higher value through a creative combination of resources to meet market demand. In other words, opportunity refers primarily to "an unspecified market need, or an unexploited resource or capability". As market needs become clearer and resources more precisely defined, opportunities will evolve beyond their basic form into business concepts, including core plans for how to meet market needs or how to allocate resources. As the business concept itself is elevated, it becomes more complex, including the product/service concept (i.e., what is offered), the market concept (i.e., to whom it is offered), and the supply chain/marketing/operations concept (how the product/service is brought to market. In turn, this precise and differentiated business concept matured and eventually evolved into a well-developed business model that combines market demand with resources.

According to Henry Chesbrough, it makes excellent financial sense for organizations to gain the competence to reinvent their business models since the same concept or technology brought to market through two distinct business models will deliver two different economic outcomes .

According to Gray Hamel, a business model is a business philosophy that has been put into practice, and a business philosophy is an idea or concept that exists in the mind of the operator about how to do business and how to satisfy the needs of customers . Regardless of the name (such as idea, business concept or business idea), an idea is ultimately a rationalized and logical product after the opportunity is identified, and the idea becomes a business model after it is differentiated. However, the process of forming a business model is not only through purely static thinking, but also through numerical and logical tests, and the initial test of the market, and after trial and error, it gradually becomes finalized (Magretta, 2002). W. Zhang et al. believe that, rather than the technical, legislative, and socioeconomic changes that are

commonly regarded, the long-term expectations that customers have had but were neglected or not addressed, are the key drivers for business model innovation .

2.1.2 The nature of the business model

J. Magretta argues that, in essence, a business model describes how a business works (Magretta, 2002). A good business model answers the questions that have long haunted Peter Drucker's mind: Who are the customers? What do customers value? It can also answer the fundamental question that every manager must answer: how do we make money through our business activities, and it can explain the underlying economic logic of how we deliver value to customers at the right cost. The business model is related to the way the entire business system works and, if used correctly, can motivate managers to take their business seriously.

According to Bohnsack et al. , the evolution of a business model is seen as a sequence of incremental modifications that incorporate service-based components to a product that were originally established by entrepreneurial enterprises (Bohnsack et al., 2014). The business models of incumbents and entrepreneurs appear to be convergent over time. However, according to Ma et al, business model innovation frequently leads to market innovation and subversion, which in turn encourages a new cycle of iterative product renewal (Ma et al., 2021).

Some scholars have clarified and categorized the numerous definitions of business models, and Michael Morris et al., through a content analysis of more than 30 key words of business model definitions, pointed out that business model definitions can be divided into three categories, namely economic, operational, and strategic. The economic definition considers the business model as the economic model of the enterprise, which refers to the profit generation logic of "how to make money", and the relevant variables include revenue sources, pricing methods, cost structure and profit. The operational definition focuses on the internal processes and constructs of the company, including product or service delivery methods, management processes, resource flows, knowledge management. The strategic definition involves the market positioning, organizational boundaries, competitive advantage and sustainability of the company, and the related variables include value creation, differentiation, vision and network. In all three definitions, variables such as value offerings, economic models, customer interfaces or linkages, partnership networks or roles, internal infrastructure or related activities, and target markets recur repeatedly and play a significant role as strategic elements.

According to Baden-Fuller and Haefliger, Despite the fact that business models are inextricably related to technical progress, the business model design is separated from technology (Baden-Fuller & Haefliger, 2013). The essence and definition of business models

show that business models are being extended from the economic and operational levels to the strategic level, i.e., from the initial focus on products, marketing, profits and processes to customer relationships, value provision and even market segmentation, strategic objectives and value propositions. The business model initially emphasized the revenue model, but the tracing of revenue sources led to the expansion of the components. In fact, the tracing of revenue sources has led the business model to the essence of entrepreneurship, which is to seize market opportunities to create more value for customers, and to create real value only after satisfying unmet consumer needs or solving problems in the market. Therefore, the combination of internal resources and external market opportunities is the starting point of business model research. At the same time, the expansion of the model components also makes two characteristics of the business model more prominent.

Firstly, the business model focuses on describing the overall and systematic nature of the business. Morris et al. argues that "a model is much more than the sum of its parts. It embodies the essence of how the enterprise system is focused" . The importance of the business model to the enterprise as a whole is expressed in the attention to the combination of elements of the enterprise. The creative combination of elements is the result of the entrepreneurial spirit of the entrepreneur, and this is the principle of entrepreneurial action that must be emphasized again and again. Schumpeter's five innovative combinations clarify the status of different factor combinations in corporate innovation and entrepreneurship. In addition, the emphasis on the systemic nature of business models has led to a gradual increase in the strategic nature of the model, which has become a strategic unfolding of the underlying economic logic.

Secondly, the business model contains both value creation and value acquisition mechanisms. The business model is a comprehensive concept, which does not refer to a pure profit-making model, but also does not abandon the content of value acquisition, but organically combines the source of value (i.e., value creation) and value acquisition, forming a balance of two mechanisms of value generation and acquisition within the enterprise. These two mechanisms also reasonably illustrate the internal logical relationship between the internal resources and capabilities of the enterprise and the external competitive advantage. Value creation and value capture occur simultaneously and coexist in the firm. As Amit and Zott (2001) point out, value creation in e-businesses is generated by four drivers, namely novelty, lock-in, complementarity and efficiency, and in fact the two factors of lock-in and novelty are also important ways of value capture . Our scholars have also combined value creation and acquisition in business model research. From the perspective of entrepreneurship research, entrepreneurs are considered to be opportunity-focused and innovation-seeking people who

focus on acquiring economic benefits rather than efficiency, that is, entrepreneurs obtain rewards by creatively satisfying consumers' needs and do not pay much attention to the operational efficiency in the process of opportunity development, and in a sense, there is a tendency to emphasize value creation and neglect value acquisition. However, some recent entrepreneurship studies have paid more attention to the efficiency of opportunity exploitation, and entrepreneurs have paid more attention to the balance of effectiveness and efficiency in the process of opportunity exploitation. The study of business models has undergone a similar process, shifting from a focus on gain (value capture) to a search for a balance between value creation and capture. Therefore, business models can provide guidance for entrepreneurial activities in the process of developing opportunities that seek a balance between value creation and acquisition, and become a desirable goal for startups to achieve; business models will also become an important tool for entrepreneurship theory research.

2.1.3 Components of a business model

Due to the differences in the definitions of business models defined by scholars, the components of business models and their structures are also diverse, which in turn leads to significant differences in the application of the relevant theories. Currently, the main business model research is in the field of e-commerce. While early research focused on how online businesses derive revenue, subsequent research began to distinguish between types of models based on product offerings, value creation processes, business structures, and other variables. As a result, there has been a relative abundance of research on the components of models, but there is still no consensus on the key components. Table 2.1 provides an overview of the research on model components.

As can be seen from Table 2.1, the number of business model components ranged from 3 to 8; a total of 25 different items were mentioned as possible elements of the model, some of which were mentioned several times, such as value offering (12 times), economic model (11 times), customer interface/relationship (9 times), partnership (7 times), internal infrastructure/activities (7 times), and target market, resources/ Capabilities, products, and revenue sources were also repeated again and again.

These model elements are not a haphazard combination. Generally speaking, there are two basic types of composition structure of elements: one is horizontal enumeration, that is, the elements are horizontal enumeration relationship, similar to each other in importance, each element represents a separate aspect of the enterprise, but they must work together; the second is the network type, that is, the basic elements of the model from the vertical level or another

perspective of integrated consideration, the elements are closely linked, forming a hierarchy or grid, as a system in the enterprise The second is reticulation. Regardless of the combination, the elements must have strong logical relationship with each other, reflecting the systemic and holistic nature of the business model.

Table 2.1 Components of a business model

Authors	Component	Number of elements	E-commerce or general business	Empirical support
Horowitz (1996)	Price, Products, Distribution, Organizational Features, Technology	5	General Business	No
Viscio & Pasternak (1996)	Globalization Core, Governance, Business Units, Services, Relationships	5	General Business	No
Timmers (1998)	Product/Service/Information Flow Structure, Business Participants and Roles, Participant Benefits, Revenue Sources, Marketing Strategy	5	E-Commerce Enterprise	Yes
Markides (1999)	Product Innovation, Customer Relations, Infrastructure Management, Financial Strength	4	General Enterprise	None
Donath (1999)	Customer understanding, marketing tactics, corporate governance, internal network capabilities, external network capabilities	5	E-Commerce Enterprise	None
Gordijn (2001)	Players, market segmentation, value offering, value activities, stakeholder networks, value interfaces, value points, value exchange	8	E-Commerce Enterprise	None
Linder & Cantrell (2001)	Pricing Model, Revenue Model, Channel Model, Business Process Model, Business Relationships Strengthened by Networks, Organization Type, Value Proposition	7	General Enterprise	Yes
Chesbrough & Rosenobaum (2000)	Value proposition, target market, internal value chain structure, cost structure and profit model, value network, competitive strategy	6	General Enterprise	Yes
Gartner (2003)	Market supply, capabilities, core technology investments, break-even	4	E-Commerce Enterprise	None
Hamel (2001)	Core strategy, strategic resources, value network, customer interface	4	General Enterprise	None

Petrovic (2001)	Value model, resource model, production model, customer relationship model, revenue model, capital model, market model	7	E-Commerce Enterprise	No
Dubosson Torbay (2001)	Product, customer relationship, partner network and infrastructure, financial interface	4	E-Commerce Enterprise	Yes
Afuah & Tucci (2001)	Customer Value, Business Scope, Price, Revenue, Related Activities, Complementarity, Capability, Sustainability	8	E-Commerce Enterprise	No
Weill & Vitale (2001)	Strategic Objectives, Value Proposition, Revenue Sources, Success Factors, Channels, Core Competencies, Customer Segmentation, IT Infrastructure	8	E-Commerce Enterprise	Yes
Applegate (2001)	Perception, Capability, Value	3	General Enterprise	No
Amit & Zott (2001)	Deal content, deal structure, deal governance	3	E-Commerce Enterprise	Yes
Alt & Zimmerman (2001)	Mission, structure, process, revenue, legitimacy, technology	6	E-Commerce Enterprise	No
Rayport & Jaworski (2001)	Value set (clust er), resource system, financial model, market space	4	E-Commerce Enterprise	Yes
Betz (2002)	Resources, sales, profits, capital	4	General Business	No
Michael Morris 、Minet Schindehutte & J effery Allen (2003)	Supply-related factors, market factors, internal capabilities, competitive strategies, economic factors, personal/investor factors	6	General Enterprise	Yes
Shi, Baijun (2002)	Set, complementary goods, network externalities, private knowledge, preemption	5	General Enterprise	Yes
Weng, Junyi (2004)	Value object, value content, value offering, value recovery	4	General Enterprise	Yes

Source: Michael Morris (Morris et al., 2005)

The horizontal enumeration business model is relatively common, mainly because the scholars' understanding of business models is still relatively shallow, and the horizontal enumeration model cannot deeply reveal the complex structure inside the model. Among them, the business model proposed by Hamel is relatively well-developed and mature, and it is also one of the more popular models in recent years (Hamel, 2001). He believes that the business

model should include four major elements: customer interface (response processing and support, information and insight, firm-customer interaction, pricing), core strategy (including business purpose, product/market scope, differentiation basis), strategic resources (core competencies, strategic assets, core processes), and value network (suppliers, partners, alliances). These elements form an interface between two of them (customer interests, configuration and company boundaries, respectively), and these interfaces tie the four elements together into a coherent operating whole. In addition, the model must be efficient, unique, consistent, and fully effective with the role of profit-enabling factors. The model includes almost all aspects of business strategy, and is a good framework for a comprehensive understanding of the overall business situation, and has been used to good effect in business consulting practice. However, such a broad model fails to identify what gives a company performance and advantage over other companies, and does not better explain the cause-and-effect relationship between segmentation factors. Although profit drivers are important, they are not included in the basic elements of the model. These reasons lead to the relative limitations of the model.

According to Casadesus-Masanell and Ricart, they provide a conceptual framework for separating and relating business model and strategy, and they discover that in basic competitive scenarios, strategy and business model have a one-to-one mapping, making it impossible to distinguish the two concepts. The firm's achieved strategy is reflected in the business model (Casadesus-Masanell & Ricart, 2010).

According to Jansen et al., in dynamic situations, exploratory innovation is more effective, but in more competitive environments, exploitative innovation is more helpful to a unit's financial success (Jansen et al., 2006).

Other scholars, according to Chesbrough and Rosenbloom, view business models as a combination of five aspects such as market, value proposition, cost and profit, value network, and competitive strategy (Chesbrough & Rosenbloom, 2002). Amit and Zott propose three elements of transaction content, transaction structure, and transaction governance (Amit & Zott, 2001). The role of these business models is to provide managers with tools for comprehensive thinking and analysis, to form a cognitive framework for the business system, and to prevent omissions in the construction of the business model, but the operational logic of the business often becomes a potential factor. The role of business models in guiding entrepreneurial activities is greatly limited by the difficulty of understanding the intrinsic relationship between the components of the business model and how they are composed. In addition, while business models emphasize the importance of business resources, they often ignore the decisive role of entrepreneurs in the entrepreneurial process. The reason for this is that business models are

basically drawn from the cases of mature enterprises, where the development of the enterprise relies more on the system than on the individual, and therefore the role of the entrepreneur in the business model is not obvious. In fact, in the process of developing ideas into mature business models, entrepreneurs play an active role in all the components of the business model and finally complete the unique combination of elements to form the unique business model of the enterprise, so the entrepreneur must be placed in an important position when studying business models from the perspective of entrepreneurship. The research results of reticulation business model are less, but this kind of business model emphasizes the cause-and-effect logical sequence of the status and function of each element. Michael Morris et al. argue that "the business model is a set of interrelated determinants of entrepreneurial strategy, business structure, and economic domain that create sustainable competitive advantage in a defined market", covering the entrepreneurial domain, organizational structure, and value chain, operations management, market segmentation, and sustainable competitive advantage (Morris et al., 2005). It covers the entrepreneurial field, organizational structure and value chain, operations management, market segmentation and sustainable competitive advantage. Based on this understanding, they propose a business model that includes three levels and six elements. Each level of the model takes into account six aspects: supply-related elements, market elements, internal capability elements, competitive strategy elements, economic elements and individual/investor elements. The three levels of the model are the base level, the specific level and the rule level. Although the element categories in each level are the same, the elements have different focuses. The foundation level focuses on the basic aspects and general characteristics of strategic competition, addressing the basic decisions that entrepreneurs must make and ensuring that these decisions are internally consistent, and is the basis for the role of the unique level; the unique level focuses on the unique combination of the six elements that entrepreneurs can build to create an inimitable advantage and answer the question "how do you create value? "Morris et al. propose a model that shows that when a venture is at different stages of development, the basic, unique, and rule layers will play the main roles in turn. The perfection of the rule layer also marks the maturity of the firm. A similar model is proposed by Dubosson-Torbay et al. This model divides the four elements of product, customer relationship, partner network and infrastructure, and financial elements into two levels, where financial elements are the basis of the first three elements. The three elements of value stream, revenue stream and logistics stream are combined with the market structure to form a two-dimensional model . The business model proposed by Michael Morris has obviously noticed the importance of individuals in the process of model construction, and the time, scope and scale of the

entrepreneur's intention become important factors in determining the "investment model" of the enterprise, which to a certain extent compensates for the shortcomings of the Gray Hamel model. In contrast, the net model focuses more on the intrinsic causal relationships among the factors, clarifies the role and sequence of each factor in the enterprise, better explains the unique combination of factors in the enterprise, and clarifies the origin of the competitive advantage of the enterprise. Although the network model does not yet fully characterize the linkages of factors and how firms can differentiate the model, it is a solid step in the right direction.

2.1.4 Fundamental theory regarding business models

Since the year 2000, business models have received increasing attention from researchers. Researchers believe that the core of a business model is the value creation and profit gain-oriented structure formed between the enterprise and external subjects, and on this basis seek to dimension the business model concept based on different perspectives such as strategy, organization and entrepreneurial process . The business model is not static, but constantly adjusting and continuously transforming , but a process of optimizing and reorganizing resources . The adjustment of business model refers to the change and revision of the original business model , breaking through the old and establishing a new resource structure, which is mainly derived from the structural properties of the established business model . The formation of business model and adjustment process can be analyzed at two levels: the foundation attribute, which explains the source of value, and the value attribute, which focuses on answering the source of advantage . Many studies consider business model formation and adaptation as a process of combining elements . In terms of fundamental attributes of business model, the basic directions are value creation and value gain respectively: the former refers to the key business and core resources that ensure the operation of the business model , and the latter refers to the revenue gained by the enterprise in the operation of the business model . In addition, value proposition is to propose products and services corresponding to what users demand most (and is considered as a prerequisite for business model innovation . Value proposition, value creation and value gain are considered by many researchers as the basic elements that constitute a business model. This study focuses on the construction process of business model in terms of underlying structural attributes. Compared with the studies on construction drives of business model, the business model construction process of start-ups has been relatively little studied. It should be noted that business model adjustment is different from the evolution of business model, and the former shows more subjective initiatives of managers. At the same time, these two concepts are closely related. On the one hand, the evolution of

business model is the continuous optimization of business model components and the interaction between them, in which the internal and external adaptability of the business model is improved in order to enhance enterprise performance; On the other hand, business model evolution is manifested as the adjustment of one business model to another, and even includes changing the basic business logic of the enterprise to achieve significant innovation in business models . To change into a new business model, D. Yang ET AL. believe that enterprises must not only restructure their internal resource base, but also realign their external cooperation network as a primary firm-centered boundary bridging activity system . P. Liu and Bell identify three key initiating factors for business model innovation in the firms studied: constant and rapid product iteration, as well as an emergent strategy, leading to business model innovations to fully exploit the firms' competitive advantages; a response to threats and environmental changes; and opportunistic behavior to extend the business model to new markets .

Researchers still hold different views and focus on the evolution and adaptation of business models, mainly due to the different underlying theories on which they are based. In summary, the three main theoretical schools of thought include rational position, evolutionary learning, and managerial cognition . In summary, the three main theoretical schools of thought include rational orientation, evolutionary learning, and managerial cognition .

The Rational Positioning School believes that a business model is a purposeful design of the manager's internal and organizational boundaries that reflects the manager's rational choice. When designing business models, managers rationally analyze the environment and apply economic logic to their observations to design the optimal value creation and acquisition model . When external technological or regulatory conditions change, managers optimize the business model . The evolutionary learning school believes that organizational capability is a reliable and reusable “behavioral norm” . The evolution of business models is more about iterative trial-and-error adjustments rather than anticipatory change. Business model evolution is the result of continuous learning in corporate entrepreneurial practice . Business model evolution is the result of continuous learning in corporate entrepreneurial practice also known as learning from failure, which is characterized by mistakes as a frame of reference. The management cognitive school believes that management cognition is a major influence on the occurrence of management change. Cognition reflects the attitudes and perceptions of individuals acting in an organization about the external world and the cause-and-effect relationship between actions and outcomes. Porac et al state that managerial cognition is “a collection of relevant information” that influences strategic decisions by providing information-seeking, information-interpreting, and action-logic functions, which in turn affects firm performance and determines whether the

firm has a competitive advantage . From a dynamic perspective, managerial cognition is an information screening process by which top managers with rationality translate their perceptual structure into behavior . Business models reflect managers' managerial mental models and schemas, demonstrating the structure of managers' perceptions of a company's business boundaries, value creation, and organizational structure and regulation . Entrepreneurs' initial business model perceptions are reflected in business conceptual assumptions and business logical assumptions, derived from entrepreneurs' prior experiences, information searching and mental activity . Analogical learning and conceptual integration are the main methods for managers to develop cognitive drivers for business model innovation . Unique perceptions and the thinking process are the main factors leading to the uniqueness of the business model, while the particularity of the entrepreneurial scenario is the main reason why managers form unique perceptions .

In the process of strategic entrepreneurship, the cognition of top management is the "brain" of strategic entrepreneurship, and its cognitive transformation process plays an important role in the search for opportunities and advantages . "Cognition" is a concept in the field of psychology, which essentially refers to a complex mental system, including perception, attention, memory, reasoning, decision-making and other mental activities . Cognitive theory can be used to link the relationship between decision makers' perceptions and uncertain environments and behaviors, and for researchers to consider the mechanisms of strategic organizational action. Scholars in the field of strategy research refer to the cognition of top managers or decision makers in organizations as managerial cognition . Scholars in the field of management cognition have inherited Walsh's idea of management cognition as a set of knowledge structures shared by strategic decision makers, and the cognitive characteristics of strategic decision makers as a whole are characterized by the concentration and complexity of knowledge structures . Concentration of management cognition expresses the number of core concepts in the management cognitive structure . The core concepts determine the strategic decision makers' search for information and their emotions toward information . High management cognitive complexity implies a high degree of diversity in the core concepts of management cognition and a high degree of complexity in the causal connections between these concepts . From the perspective of information search, strategic decision makers can perceive more environmental stimuli if the core concepts are more diverse, and can capture, identify, and understand environmental changes more sensitively .Weick's research points out that complex management cognition can promote strategic decision makers to develop a broader sense of identifying opportunities, and firms with high management cognitive complexity are

more adaptive in strategy, and their strategic Behavior is characterized by adjustment and renewal . Shang et al. concluded that management cognition needs to maintain complexity in dynamic environments to effectively drive strategic change and improve corporate performance; however, management cognition needs to maintain focus in stable environments to promote stable and aggregated corporate strategic behavior.

Compared to static analysis of management cognition, management cognitive shift reflects more dynamically the change from initial to set management cognition and can provide a more convincing basis for explaining strategic entrepreneurial actions . Management cognitive shift is essentially a change in the knowledge structure used by top management in decision-making. When strategic decisions based on the original knowledge structure fail to meet expectations, strategic decision makers revise the knowledge structure to address the problem with new experiments or alternative solutions . The fundamental shift in management cognition does not occur overnight; it begins when the psychological profile of strategic decision makers changes from a "self-enhancement model" to a "problem-solving model" and undergoes an evolutionary logic of unlearning, changing, and solidifying . Although the current study points out the logic of management cognitive transformation, it does not analyze the process of management cognitive transformation from the perspective of changes in the shared knowledge structure characteristics of strategic decision makers, nor does it unveil the "process black box" of how cognitive transformation affects business model building actions.

There are significant differences in the explanations of business model evolution by different theories. The positioning school views managers as highly rational decision makers who need to make the best decisions by analyzing their environment. However, critics argue that managers are not able to accurately portray the corporate performance due to the complexity of the system, a variety of options, and the complex interaction of elements . The evolutionary learning school emphasizes search and trial-and-error learning, but lacks some explanation of the extent to which managerial cognition can influence managerial behavior . The cognitive school of management believes that the evolutionary learning theory, which suggests that firms can only react passively based on experience, actually ignores the subjective and active role of managers and attributes too much of the firm's success to the luck, which does not explain well the origin of the firm's competitive advantage .

Therefore, some studies have combined the evolutionary school's theory of organizational competence with managerial cognition theory, arguing that organizational competence and managerial cognition are unified and mutually reinforcing. Gavetti and Levinthal argue that managerial perceptions influence the choice and practices of corporate -- the two main driving

factors of competence formation . Management cognition has a direct and critical influence on the evolution of strategic corporate behavior and organizational capabilities , causing the creation or interruption of paths in the dynamic development of organizational capabilities . Some scholars argue that the formation and change of managers' perceptions is a set of social activities, influenced by continuous feedback on business performance . The change of business model is the process of knowledge generation, acquisition, synthesis and use. Knowledge is considered part of the resource capability, which in turn drives further changes in business models . In their analysis of business model alignment, Yun found from another perspective that previous studies could be classified from four different perspectives, such as instrument-oriented, constructivist, neo-institutionalist, and learning . Research from a instrument-oriented perspective argues that business models are the bridge between entrepreneurial opportunities and value creation, and that experimentation of business model is an important mechanism for startups to adapt their business models; Research from a constructivist perspective, on the other hand, emphasizes the role of purpose in adapting business models for entrepreneurial firms; the neo-institutionalist favors researching on institutional pressures and the influence of existing mainstream firms on the business model adjustment of entrepreneurial ventures; The study under the learning perspective focuses on the role of experiential learning on the adjustment of business models of entrepreneurial firms . This thesis is, in the process of business model construction, mainly based on the entrepreneurial process perspective from the case study, to discover, analyze and explore the relationship between different concepts to form a new understanding of business model adjustment.

Sosna, M. suggests that business model evolution and adjustment is mainly due to the high level of internal and external uncertainty, and argues that managerial perceptions, organizing and learning have a significant impact on business model evolution and adjustment. Leaders and managers play an important role in the innovation and evolution of business models . Management change is also considered to be a process of continuous setting of management cognition, and setting is the result of continuous interaction among management cognition, environment, and corporate behaviors . Entrepreneurs develop unique information processing and decision-making methods when receiving and processing information, which becomes the basis of the company's unique business model . Learning about organization is seen as an important way to drive business model adaptation. Sosna et al found that startups make timely business model adjustments through learning after identifying problems within the business model . According to McGrath, McGrath found that in complex, rapidly changing, and highly uncertain environments, rapid experimentation and learning helps to quickly adjust business

models to respond to environmental changes . Organizational search is also thought to positively influence business model innovation . Organizational search to form new ideas by searching and using external knowledge , and is “the creative integration of knowledge from different external sources for problem solving” . Different concepts such as innovation search, external search, and cross-border search all belong to the category of organizational search. However, this study is expected to build on the existing research to investigate how the above factors work together and which factors are the direct drivers of business model adaptation.

2.1.5 Research on the motivation of business model adjustment

Researchers suggest that business model evolution and adjustment are mainly due to high internal and external uncertainties, and that managerial perceptions and organizational learning have a significant impact on business model evolution and adjustment.

Leaders and managers play an important role in the innovation and evolution of business models . Management change is also considered to be a process of continuous setting of management cognition, which is the result of continuous interaction between management cognition, environment, and corporate behavior . As entrepreneurs receive and process information, they develop unique information processing and decision-making methods that form the basis of their unique business models .

Organizational learning is considered to be an important way to drive business model alignment. Sosna et al. found that startups make timely business model adjustments through learning after identifying problems within the business model . McGrath's research found that in complex, rapidly changing, and highly uncertain environments, rapid experimentation and learning can help quickly adapt business models to respond to environmental changes .

Organizational search is also believed to positively influence business model innovation . Organizational search is the search and use of external knowledge and knowledge base to form new ideas, and is "the creative integration of external knowledge from different sources to solve problems". Different concepts such as innovation search, external search and cross-border search all belong to the category of organizational search. However, there is still room for further research on how these drivers interact with each other and which factor is the direct driver in business model alignment.

2.1.6 Study on the process of business model construction

The Activity-stage Model is the main way to describe the innovation process of the business model. Casadesus-Masanell and Ricart proposed a two-stage model, which defines the first stage as the stage of model establishment, which mainly specifies the main logic of the business model and belongs to the strategic stage . The strategic choice of business model is defined as the second stage. In addition, depending on different understanding, the innovation of business model can also be classified into three phases, four phases or five phases. Sosna et al. consider business model adaptation as a trial-and-error learning process . Cannon and Edmondson proposed that trial-and-error learning consists of three phases: accurate recognition and systematic analysis of failures, training of main personnel, selecting key processes for experimentation and observing the results . According to McGrath. McGrath argues that receiving and recognizing failure allows for the description of failure contexts and accumulating the failure experience to modify organizational behavior . Petkova studies the failure learning process of entrepreneurship and proposed three processes of outcome, failure recognition and failure correction, emphasizing the importance of entrepreneurs learning quickly from failures to change their knowledge structure, arguing that the lack of resources and the high uncertainty, time pressure and innovation complexity of the tasks faced by entrepreneurs require them to react quickly and act fast . Overall, there are relatively few studies on the process of business model construction for start-ups in nascent markets.

According to McDonald and Kathleen, entrepreneurs take advice from their peers and focus on well-known substitutes for their services or products, test assumptions, commit to a broad business-model template, pause before elaborating the activity system, and organize theory with business model processes to show how organizations actually work and create value (McDonald & Eisenhardt, 2020).

On the whole, there are relatively few studies on the business model construction process of start-ups in nascent markets. The process of studying the business model of start-ups in nascent markets is still a black box, and the main processes and the mechanism of their interaction with business model elements need to be further revealed. Scholars have not yet explored the different business model paths of start-ups in nascent markets. Therefore, this thesis focuses on the process and mechanism of business model construction for start-ups in nascent markets.

2.1.7 Study on business model adaptation of start-ups from different perspectives

A startup is a temporary organization that aims to find a scalable, repeatable and profitable business model. Business models are extremely valuable for entrepreneurial ventures, and their development and implementation are important issues related to the survival and growth of entrepreneurial ventures (Zott & Amit, 2007). However, existing academic research has neglected the issue of business model generation and evolution of entrepreneurial firms. The generation of business models of entrepreneurial firms is a process of continuous adjustment (Winter et al., 2003). In this regard, academics have largely reached a consensus, but there is no consensus on the issue of how startups adjust their business models through experimentation. There may be three important reasons for the divergent views of academic studies. First, scholars have different perceptions of business models and thus conduct research from different perspectives; second, most scholars do not pay attention to the applicable conditions of different adjustment mechanisms when studying the business model adjustment problem of entrepreneurial enterprises, which leads to unclear theoretical boundaries and inconsistent research findings; finally, scholars currently mainly focus on a single perspective such as means-oriented, constructivist, neo-institutionalist, and learning to Finally, scholars have mainly studied the business model adjustment of entrepreneurial enterprises from a single perspective, such as means orientation, constructivism, neo-institutionalism, learning, which has led to "blind men feeling the elephant" type conclusions. In view of this, the following thesis reviews different perspectives on business model alignment in entrepreneurial ventures.

Through a review of research on business model adjustment in entrepreneurial firms, we found that existing research is mainly based on four different perspectives, such as means-oriented, constructivist, neo-institutionalist, and learning. Specifically, the research from the means-oriented perspective analyzes the experimental and recursive nature of business model adjustment and emphasizes the importance of business model experimentation; the research from the constructivist perspective emphasizes the role of meaning construction for business model adjustment in startups and mainly analyzes the impact of interaction with stakeholders on business model adjustment; the research from the neo-institutionalist perspective emphasizes the role of legitimation for business model adjustment in startups and highlights the impact of institutional pressure on business model adjustment in startups. The study from the neo-institutionalist perspective emphasizes the role of legitimation in business model adjustment, highlighting the impact of institutional pressure on business model adjustment of entrepreneurial firms; while the study from the learning perspective emphasizes the role of

experiential learning in business model adjustment of entrepreneurial firms, highlighting the important role of experience accumulation and knowledge transfer in the process of business model adjustment. Although the studies on business model adjustment from different perspectives have their own focus, there is also a certain degree of overlap, such as both experiential learning and business model experimentation emphasize the importance of experience, and both legitimation and meaning construction emphasize the importance of stakeholders. In order to provide domestic readers with a comprehensive understanding of the current status of entrepreneurial business model alignment research, the following is a systematic review of entrepreneurial business model alignment research based on the above four perspectives and an analysis of the shortcomings of existing research.

Means-Oriented Perspective

Scholars who study business model alignment based on a means-oriented perspective typically view business models as a bridge between entrepreneurial opportunities and value creation and argue that business models of entrepreneurial firms are developed gradually in practice (Chesbrough & Rosenbloom, 2002; Ozcan & Eisenhardt, 2009; Sarasvathy, 2001). Business model adaptation research from a means-oriented perspective focuses on the business model adaptation of entrepreneurial firms under emerging market conditions and emphasizes the importance of business model experimentation. For example, Andries et al. conducted a case study of seven emerging market firms and found that startups that followed a means-oriented logic were able to avoid starting a new business model change by continuously adapting to a viable business model rather than sticking to the initial business model (Andries et al., 2008). The business model practices of these case companies fully embody the philosophy of "crossing the river by feeling the stones", which helps companies to find their own business models step by step. According to Chesbrough, it is difficult for entrepreneurs to collect enough data for environmental analysis, so the goal-oriented logic is less useful, while the means-oriented logic emphasizes the importance of action and experimentation, thus helping companies to adjust their business models in time (Andries et al., 2013). Adjusting the business model often requires creating temporary project-based organizations, combining the resource and knowledge spillover effects of different activities to control or reduce expenditures, reducing the uncertainty of the business model by continuously reducing its alternative options, and eventually approaching a viable business model gradually. Research on business model adaptation in entrepreneurial firms based on a means-oriented perspective not only emphasizes the importance of continuous business model adaptation in emerging market conditions, but also focuses on the synergistic effects created by business model experimentation and emerging

markets. In emerging market contexts, both the market environment and the potential returns of firms are highly uncertain. While the new market is still in the process of formation, the entrepreneur selects one or a few opportunities that he identifies and designs an initial business model for his chosen opportunity and according to his conceived market hypothesis; he then takes entrepreneurial actions based on the business model, following a means-oriented logic to conduct business model experiments and test his previously conceived market hypothesis (Morris et al., 2005; Sarasvathy, 2001; Venkataraman et al., 2012). As more entrepreneurs enter and entrepreneurial activity deepens, emerging markets develop their own structure (Davis et al., 2009). The business model adjustment process of startups in emerging market conditions and found that means-oriented logic and market-driven strategies can together influence the business model adjustment process of entrepreneurial firms and shape the structure of emerging markets. Thus, the business model adjustment process and the new market creation process evolve synergistically in emerging markets.

The above review reveals that means-oriented logic provides the following two insights to explain the problem of business model adjustment of startups under emerging market conditions.

First, business model experimentation is an important mechanism for startups to adjust their business models under emerging market conditions. Rather than advocating forecasting future revenues or assessing the risks one may have to face before deciding to invest in a venture, the means-oriented logic starts the entrepreneurial process by assessing one's financial situation and psychological capacity. This logic emphasizes the role of experimentation and the losses that entrepreneurs can afford to incur, so entrepreneurs will try to avoid making large one-time investments and instead experiment with small costs to gain market information and adjust their business models (Sarasvathy, 2001).

Second, the business model adjustment of entrepreneurial firms under emerging market conditions evolves in concert with the new market creation process. To cope with the uncertainty of new market creation, entrepreneurial firms often prefer strategic flexibility at the expense of transactional efficiency in the business model adjustment process in order to win the commitment of as many stakeholders as possible and thus improve their business models (Davis et al., 2009). Entrepreneurs can enter the market through alliances or other cooperative operating strategies to gain stakeholder commitment, hedge risk and market test their business models.

Although the research based on means-oriented perspective provides some insights into the business model adjustment of startups, it also reveals some problems. First, means-oriented

logic research focuses on emerging markets with high uncertainty, while ignoring the business model adjustment of startups in mature markets with low uncertainty. Second, means-oriented logic is not the only factor that influences entrepreneurial firms to adapt their business models. While scholars have explored the synergistic effects of means-directed logic and emerging market creation on business model alignment, they have not focused on the relationship between means-directedness and other key factors that influence business model alignment, such as entrepreneurial learning. Finally, studies from this perspective have explored means orientation as a unidimensional construct to explore its role in influencing business model alignment, ignoring that means orientation is actually a multidimensional construct that includes dimensions such as focus on experience, tolerance for loss, maintaining flexibility, and prior commitment, and thus ignoring that different constituent dimensions of means orientation may have different implications for entrepreneurial business model alignment (Chandler et al., 2011).

Constructivist perspective

Scholars who have studied entrepreneurial firms' business model adjustment from a constructivist perspective argue that entrepreneurial firms' business models are the product of social constructions of different stakeholders in the market (Aspara et al., 2011). Research from a constructivist perspective has emphasized the role of entrepreneurial cognitive constructs and meaning constructs in influencing entrepreneurial firms to adjust their business models, mainly analyzing the impact of entrepreneurial firms' interactions with stakeholders on the former's adjustment of their business models. Based on the analysis of cognitive constructs, scholars have emphasized the role of entrepreneurial cognition in promoting the adjustment of entrepreneurial firms' business models. Some scholars argue that the business model is both an objective existence in the process of business operation and a product of subjective construction by entrepreneurs (or teams) based on their own cognition. For example, Aspara et al. studied the relationship between business model adjustment and entrepreneurial team cognition in entrepreneurial firms, and found that business model adjustment at the firm level is influenced by the cognition of the entrepreneurial team (Aspara et al., 2011). Other scholars argue that business models are in fact the product of the intertwining and interaction of material and cognitive factors in the process leading to changes in a firm's business model and surrounding environment, and are socially constructed artifacts. For example, Andries et al. found that when cognition remains constant, entrepreneurs stick to the original business model design and only adjust the content of the business model; once cognition changes, entrepreneurs will restructure the business model (Andries et al., 2008). Verstraete et al. argue that in a sense, the business

model is the vehicle used by the different stakeholders of the venture to express their common values, while the entrepreneur is the designer of the venture's business model, who integrates the knowledge and resources needed to construct the business model. Based on the constructivist perspective, scholars believe that the business model of an entrepreneurial enterprise is the result of the joint action of sense-making and sense giving between the entrepreneur and the stakeholders. The business model of an entrepreneurial firm is influenced by the stakeholders in the process of generation. The interests of entrepreneurs and stakeholders vary among themselves and among different stakeholders, and therefore, different stakeholders will ask entrepreneurs to adapt the business model of the entrepreneurial venture to their own demands. Entrepreneurs may have multiple different perceptions or interpretations of the decision situation as to whether and how they should adapt their business model, and therefore face a high degree of uncertainty and possibly even a state of confusion (Weick, 1995). Entrepreneurs must selectively focus on the different claims of different stakeholders by interpreting their messages and exchanging ideas with them, i.e., by interacting with them to construct meaning to the initial business model and, after meaning construction, to communicate the meaning of the constructed initial business model to the stakeholders in a meaning-giving way. During the different stages of entrepreneurial venture generation and development, entrepreneurs continuously engage in meaning construction and meaning giving. Although both meaning construction and meaning giving focus on the formation and refinement of the business model idea, there is a difference between the two: the former requires the entrepreneur to work on forming, evaluating, and improving the business model idea themselves, while the latter requires the entrepreneur to interact and communicate with stakeholders in order to refine and implement the business model idea. The research from the constructivist perspective has some general applicability to entrepreneurial business model alignment and provides the following two insights. First, entrepreneurs' perceptions can influence the business model adjustment of startups. If entrepreneurs agree with the initial idea and basic cognition does not change, they will refine the business model in terms of content, while when entrepreneurs' cognition changes due to interaction, they will adjust the business model in terms of architecture. Second, stakeholders have an important influence on the business model adjustment of the entrepreneurial firm. The business model of an entrepreneurial firm is an artifact that is gradually formed by the entrepreneur in the process of continuous interaction with stakeholders. Entrepreneurs interact with stakeholders for two reasons: first, stakeholders have the resources necessary to execute the business model for the entrepreneur, and second, stakeholders' willingness to provide resources depends on whether

the startup's business model can satisfy their demands. Therefore, entrepreneurs adapt their business models to a large extent to satisfy stakeholders' demands in order to gain their approval and support. Although constructivist perspective studies have emphasized the important roles played by entrepreneurs' cognition and stakeholders in the business model adjustment process of entrepreneurial ventures, there are still three deficiencies overall: First, existing studies have not focused on issues such as entrepreneurial cognition formation and change, nor have they examined the deep logical relationships between entrepreneurs' cognition and environmental changes, business model adjustment and new venture performance. Second, while existing studies emphasize the important influential role of information and resources of some stakeholders (e.g., customers, venture capitalists) on entrepreneurial firms' business model adjustment, they ignore the possible important influence of legitimacy recognition of other stakeholders (e.g., government, industry associations) on entrepreneurial firms' business model adjustment. Third, most of the existing studies do not focus on the dynamics of entrepreneur-stakeholder interactions and ignore the issue of how entrepreneurs make full use of entrepreneurial network resources for business model adjustment and construction.

New Institutionalism

Scholars studying business model adjustment in entrepreneurial firms from a neo-institutionalist perspective typically argue that the dominant business model is an important institution in mature industries that serves as a cognitive framework that shapes the behavior of firms in the industry and exerts legitimizing pressures on the business model adjustment process of entrepreneurial firms. Studies from the neo-institutionalist perspective have focused on the role of legitimation for firms to adjust their business models, highlighting the impact of institutional pressures on business model adjustment. Among them, some scholars have explored the impact of legitimation pressures on the adjustment of business models of entrepreneurial firms from their perspective. For example, Hargadon and Douglas examine the great pressure on Edison's innovative business model from the gas company interests at the time in terms of legitimation, using Edison's invention of the electric light as an example, and highlight the importance of entrepreneurial firms applying robust design thinking to cope with legitimation pressure and adjust their business models. In addition, some scholars have explored the impact of industry-level institutional change pressures on firms to adjust their business models from the perspective of mature firms. For example, Moyon et al. examine the process by which music industry firms gain legitimacy for their innovative business models in the face of institutional change pressures, and find that established firms complement their business model adjustments by taking measures to adjust their strategies, change their value-creating

activities, and partner with entrepreneurial firms, using the synergistic effects of these measures and industry institutional change pressures to implement new business models. The study of business model adjustment from the perspective of new institutionalism provides the following three insights for entrepreneurial firms to adjust their business models in a targeted manner. First, the adjustment process of startups' business models can be affected by the strategic reaction actions of mature firms, and startups should avoid triggering competitive reactions from mature firms as much as possible through benefit sharing when adjusting their business models. Second, the adjustment of startups' business models will be affected by institutional pressure at the industry level, so a balance should be struck between the business model adjustment actions at the firm level and the institutional pressure at the industry level. Third, when faced with strategic reactive actions of mature firms, startups can take the same measures to adjust their business models.

Although the research from the new institutionalism perspective provides important insights for startups to make business model adjustments, the research from this perspective also has shortcomings. The research perspective mainly emphasizes the impact of industry-level and competitive legitimation pressures on business model adjustment in mature market environments, ignoring the legitimation pressures of startup stakeholders in emerging market environments. First, stakeholders of entrepreneurial firms play the role of legitimacy adjudicators. Due to the lack of performance records and business references, startups inevitably encounter a lack of legitimacy of the initial business model (Aldrich & Fiol, 1994). Second, stakeholders hold the resources necessary to effectively execute the business model, and even if they do not hold the relevant resources, they can employ different influence strategies to force the entrepreneurial firm to adjust its business model. However, only a small number of entrepreneurship scholars have examined the influence of stakeholders on startup business model adjustment from a neo-institutionalist perspective, and only focus on specific stakeholder groups that hold significant financial resources and social capital in their hands, such as venture capital or angel investment firms and business incubators (Zahra et al., 2006). Thus, the main shortcoming of the new institutionalist perspective on business model adjustment research also lies in the neglect of the legitimizing pressures that individual-level stakeholder demands exert on the business model adjustment of firms, especially entrepreneurial firms.

Learning Perspective

Scholars who have studied the business model adjustment of entrepreneurial firms from a learning perspective usually argue that entrepreneurial firms will continuously adjust their

business models through continuous learning, and therefore, the business model adjustment process of entrepreneurial firms is the process of the process of continuous learning in practice (Sanz-Velasco, 2007; Sosna et al., 2010). They mainly focus on empirical learning as a business model adjustment mechanism. Some scholars emphasize the important role of the trial-and-error property of empirical learning for business model adjustment. They argue that entrepreneurial firms have difficulty in determining how to get things right in the start-up phase and therefore pay special attention to experiential learning (Woo et al., 1994). Sanz-Velasco argues that experiential learning mainly includes experience, trial and error, "learning by doing " and other opportunistic learning approaches, which imply that the cognitive framework of a firm changes as a result of its continuous exploration in entrepreneurial practice (Sanz-Velasco, 2007). Sanz-Velasco's study of Swedish mobile web start-ups shows that experiential learning for different constituent dimensions of the business model helps start-ups Sosna et al. explored trial-and-error learning in two different phases of business model adaptation for startups: exploration and development (Sosna et al., 2010). In the exploration phase of business model adjustment, trial-and-error learning is dominated by double-loop learning, in which entrepreneurs' question not only the implementation of their own business model but also the design basis of their business model. In the development phase of business model adaptation, trial-and-error learning is based on single-loop learning, where the dominant structure of the business model need not be changed, but rather the ability to adapt to changes in the environment should be improved by giving the business model new content. For Chesbrough and McGrath, if a startup's business model is challenged by the external environment, low-cost experiential learning by trial and error is beneficial for the firm to find a viable business model quickly (Chesbrough, 2010; McGrath, 2010).

Other scholars have emphasized the importance of the knowledge creation attribute of experiential learning for adapting business models. The difference between trading and integrating knowledge resources and argued that the former triggers acquisitive learning, while the latter triggers experiential learning. In other words, if firms are able to create new knowledge through learning that is different from other organizations, then experiential learning is taking place. McGrath found that in complex, rapidly changing, and highly uncertain environments, rapid experimentation and evolutionary learning helps to respond to environmental changes by quickly adapting business models (McGrath, 2010). Therefore, in an environment with high uncertainty, experiential learning is an effective way for startups to integrate knowledge and adjust their business models to achieve rapid growth. Y. Zhang and Zhao also found that experiential learning can effectively integrate the acquired knowledge,

thus facilitating the adjustment of business models and improving the adjustment effect (Y. Zhang & Zhao, 2009). As seen above, the study of business model adjustment from a learning perspective provides two main important insights. First, experiential learning is an important mechanism for entrepreneurial firms to adapt their business models. The trial-and-error property of experiential learning allows organizations and their members to achieve desired outcomes and discard unintended outcomes through continuous practice, thus facilitating business model adjustment at a lower cost to the entrepreneurial firm (Sosna et al., 2010). Second, experiential learning also has the property of knowledge creation, thus allowing startups to innovate their business models outside the dominant logic of the industry (Chesbrough, 2010).

However, there are also shortcomings in the research under the learning perspective. First, the generalized business model adjustment process of startups as a learning process does not deeply analyze the different drivers and behavioral logics of different types of learning, and thus cannot answer how and when to adopt which type of learning for better business model adjustment. Second, the learning perspective study ignores the impact of imitative learning by competitors on startups' business model adjustment. Startups do not always adjust their own business models on their own initiative; sometimes they are forced to make choices in response to market competition.

Based on the above, it is necessary to analyze the internal logical relationship between different business model adjustment mechanisms and build an integrated research framework for business model generation of entrepreneurial enterprises based on the existing research from different perspectives. The generation of business models of entrepreneurial enterprises should be the result of multiple factors. Existing research is like a blind man feeling an elephant, focusing only on a certain adjustment mechanism, ignoring the similarities and differences between different adjustment mechanisms, such as empirical learning in the learning mechanism and business model experimentation in the means-oriented mechanism, both of which essentially emphasize the importance of experience and can therefore be categorized into the dimension of focusing on experience. The interaction with stakeholders through meaning construction and meaning giving in the social construction mechanism and gaining stakeholder commitment in the means-oriented mechanism are both essentially aimed at gaining stakeholder support to reduce uncertainty, so they can be classified under the dimension of stakeholder commitment. Future research is necessary to construct an integrated analytical framework of business model alignment mechanisms. At the same time, the different attributes of the initial business model and the adjusted business model are dissected to uncover the

intrinsic mechanism and behavioral patterns of business model innovation by entrepreneurial enterprises. Entrepreneurs cannot apply off-the-shelf models to develop entrepreneurial opportunities and create value, but must design and implement a value creation system centered on opportunity development; therefore, business model construction is the key to determine the survival and growth of entrepreneurial enterprises (Doganova & Eyquem-Renault, 2009; Zott & Amit, 2007). Although many researchers argue that start-ups are more likely to engage in business model innovation than established firms due to their greater flexibility to change, no one has asked the important question of how start-ups engage in business model construction. In the future, it is necessary to explore the issue of how start-ups engage in business model constructs and how the business model adjustment process and construct mechanisms (Johnson et al., 2008).

2.2 Research on nascent markets

The scholar Aldrich proposed that nascent markets are those business environments that are still in the gestation stage and are usually found in emerging organizational arenas . Eisenhardt et al. suggested that nascent markets are characterized by an unclear industrial structure and a high degree of mobility , then Eisenhardt et al. indicated that product concepts are vague, missing, and lack a dominant logic to guide action . Thus, the Nascent Market contains those unstructured situations that are extremely ambiguous. According to organizational theory , we consider ambiguity as the lack of clear interpretation and understanding of the meaning of a given situation or event. As seen in the literature . ambiguity arises from the lack of institutionalized, recurring patterns of behavior and relationships, or unknown causal relationships. Thus, ambiguity can cause confusion and generate multiple potential interpretations. Davis et al. proposed that ambiguity is different from uncertainty, which refers to the inability to predict the probability of a particular outcome . Those theories based on the dependency logic of resources and efficiency can well explain the business model problem in uncertainty situations. Chinese scholars such as X. Wang et al. indirectly define the concept of nascent market through emerging technologies, which can be understood as technologies with potential industrial demand, development, prospects, and management with high uncertainty, which are emerging and may lead to changes in business processes, organizational structures, management thinking, business models, and enterprises, competition . China is currently in the process of rapid development, the needs of the Chinese people in both material and spiritual culture have steadily increased, the social economy has been very much enhanced, the need to

accelerate the development of new industries in the actual social development process to meet this growing demand, which is very beneficial to the development of China's social economy.

The aim is to accelerate the transformation of China's economic development mode by taking appropriate measures, while enabling the rapid development of new industries. However, the survival of start-ups in nascent markets is more difficult. Existing business model theories have not examined the following characteristics well, as they still focus on incumbent firms with large resources. The organizational identity of the start-up is either absent or non-existent . Burton et al. suggest that behavior and resources are in the early stages (Burton & Beckman, 2007; Rindova & Kotha, 2001). Hallen, ; Ozcan and Eisenhardt suggest that the lack of rights to influence other firms (Ozcan & Eisenhardt, 2009).

Graebner suggests that survival is more important than efficiency for start-ups, but at the same time, the vulnerability of start-ups makes the issue of business model building crucial (Graebner, 2004).

According to Rask & Günzel-Jensen, the business model is envisioned as a focusing device that can be used to identify market applications for emerging technologies, but the relationship between emerging technologies and the selection of a novel business model is still being researched, particularly in terms of how business model selection affects business performance in nascent market settings (Rask & Günzel-Jensen, 2019).

For studying the business model mechanics of start-ups in nascent markets, nascent markets present a fascinating scenario where entrepreneurs are often unable to identify strategically valuable capabilities, key cost functions in the industry .But it is not clear whether existing organizational theory applies when the most basic elements of the market's industrial structure are ambiguous, fickle, or nonexistent. Xu and Shan conducted a multi-case comparative study by selecting four emerging market firms based on allocation theory (in the context of facing resource constraints. Xu and Shan conducted a multi-case comparative study by selecting four emerging market firms based on allocation theory (in the context of facing resource constraints, exploring how emerging market firms can identify opportunities in a highly uncertain emerging market environment, and compete by being clever in the allocation of resource modules. However, the process and mechanism of how start-ups construct business models in the fiercely competitive marketplace have not yet been adequately theorized.

In light of these judgments, the research context of start-ups in nascent markets may provide an excellent opportunity to expand existing theories and reveal new insights.

2.3 Research on start-ups

Hossain defines nascent startups as early stage of foundation in the seed, angel or Pre-A rounds (Hossain, 2017). Zheng and Zhu suggest that startups in seed, angel or Pre-A rounds, possess no customers, revenues or profits to be evaluated as their business models are empirical (Zheng & Zhu, 2017). Rao has begun to study the growth process of start-ups in nascent markets. One of the main lines revolves around the sociology . Leblebici et al. point out that start-ups differ from established incumbents in that start-ups face survival problems . Peng et al. suggest that in the early stages of development, startups are often at the edge of industry networks and therefore often adopt reactive and adaptive strategies . By studying the growth process of start-ups, Shepherd et al. reveal that instead of general factors such as nature, size, and age differences, start-ups exhibit varying degrees of novelty at three levels: products or services, capabilities, and business areas . This perspective is useful for gaining insight into the business model building process of start-ups in nascent markets. L. Zhang et al. point out that the rapid development of mobile Internet has brought profound changes to the world economy and people's lives, and the new economic industry represented by cloud computing, the Internet of things and e-commerce has gradually become the mainstream of today's economy and society . The concept of “adolescent defects” divides new ventures into early and late stages . However, once the adolescence period is over, start-ups behave in a way that objectively evaluates the risk of startup failure may rise sharply into the so-called follow-up phase. The growth process of a start-up can be subdivided into a “survival stage” and an “initial growth stage” . For startups full of uncertainty, the factors of driving business model and general rules are harder to explore . It is generally accepted that the start-up phase is the stage before the maturity of a start-up and is at the front end of the business life cycle. There is very little research around the business model of start-ups. Most of the literature tends to classify growth stages based on “major problems” and adopts a stage model or life-cycle theory to describe the growth process of new ventures, viewing new venture growth as the process of solving major problems faced by the entrepreneurial team at different times. For example, Vohora discover that start-ups go through five stages of development and that there are critical points between adjacent stages, and that only when they overcome these critical points can they move on to the next stage of development, or else they will experience growth stagnation . Kazanjian and Drazin propose a four-stage model based on case studies of new technology firms, viewing each growth stage as the entrepreneurial team's response to the dominant problem faced by the firm as it grows . Existing process theory not only provides theoretical tools to describe the phenomenon of new

venture growth and sort out the seemingly disorderly process of new venture growth into some kind of structure, but also can help entrepreneurial teams anticipate future challenges. However, the existing theory of the growth process of start-ups, which is dominated by the life cycle theory, has many shortcomings. J. Yang et al. proposed that new enterprise growth is essentially a dynamic learning process . Similarly, Ambos and Birkinshaw point out that prototype transitions in start-ups are entrepreneurial responses to elements of the prototype that were overlooked in the previous development period, and that there is no predictable sequence of transitions . Thus, there is a chance of non-linear and non-purposeful growth of start-ups. First, most theories of the growth process of start-ups rarely consider the effects of uncertainty which actually is the prominent problem in the growth of start-ups, suggested by McGrath & MacMillan (McGrath & MacMillan, 1995). Second, scholars such as Hu and Zhang suggest that existing process theories rarely explore the important process of adjusting and exploring business directions for new firms . The scholars' arguments above are based on case evidence of uncertainty about the growth direction of start-ups. How to respond to environment is key to the growth and survival of start-ups. However, many process theories do not consider this specificity in the growth of start-ups. Finally, while start-up growth is multidimensional, the existing literature lacks a comprehensive deconstruction of the dynamic connections between the different dimensions. Although Ambos and Birkinshaw have explored this aspect to some extent, there is still need to further exploring the process and mechanism of business model construction for start-ups. Existing business model theories do not examine the building characteristics of start-ups well, as their focus remains on incumbent firms with substantial resources (Ambos & Birkinshaw, 2010). Lounsbury and Glynn, and Rindova and Kotha suggest that the organizational identity of start-ups is either absent or non-existent compared to that of “incumbent firms” . Burton and Beckman; Rindova and Kotha suggest that behavior and resources are in the early stages (Burton & Beckman, 2007; Rindova & Kotha, 2001). Hallen, Ozcan and Eisenhardt (2009) suggest the lack of rights to influence other firms. In addition, start-ups face significant strategic bottlenecks. Graebner suggests that for start-ups, survival is more important than efficiency . But at the same time, the vulnerability of start-ups makes the issue of business model building critical. In light of these judgments, the research context of start-ups in nascent markets may provide an excellent opportunity to expand existing theories and reveal new insights.

The business model for start-ups is actually a value creation model with opportunity development at its core (Amit & Zott, 2001; Zott et al., 2011). Although opportunity has been a central topic in entrepreneurship research, the issue of business models, especially the

dynamics of start-ups adapting their business models, has long been underappreciated in the field of entrepreneurship research (Morris et al., 2005; Shane & Venkataraman, 2000). Fortunately, more and more scholars in entrepreneurship research have started to pay attention to the problem of business model generation for start-ups, and basically agree that the generation of business models for start-ups is a process of continuous dynamic evolution and adjustment. There is a general academic consensus on this, but there is no consensus on the issue of how startup entrepreneurs dynamically evolve their business models (Aspara et al., 2011). There may be three important reasons for the divergence of views in academic research. First, scholars have developed their research on business models from different perspectives, and thus have different understanding of business models; Secondly, most scholars do not focus on the applicable conditions of dynamic evolution of business models of start-ups when studying the dynamic evolution of business models of start-ups, which leads to unclear theoretical boundaries and inconsistent research findings. Chinese scholars Yue et al. have sorted out the foreign business model adjustment research literature into four perspectives, which are highly instructive . The study from a means-oriented perspective focuses on the continuous generalization and trial-and-error of business model evolution, emphasizing the importance of trial-and-error and iteration of business models for start-ups; Research from a constructivist perspective focuses on analyzing the impact of interaction with stakeholders on business model construction, emphasizing the role of constructing purpose for start-ups to build their business models; Research from a neo-institutionalist perspective highlights the impact of institutional pressures on the construction of business models for start-ups, emphasizing the role of legalization in the construction of business models for entrepreneurial firms; the study under the learning perspective, on the other hand, highlights the important role of experience accumulation and knowledge transfer in the business model adjustment process, emphasizing the role of entrepreneurial experiential learning in the adjustment of business models for start-ups. Although studies on the dynamic evolutionary construction of business models from different perspectives have their own focus, there is at the same time a certain degree of overlap. For example, both experiential learning and business model testing emphasize the importance of experience；legalization emphasizes the importance of stakeholders. However, Yun et al. mainly study the dynamic evolution of business models of start-ups from a single perspective, and reach conclusions similar to the story “elephant and the blind men” (Yun et al., 2013). The shortcoming of such a study is that a descriptive literature summary from four perspectives does not allow for an integrated convergence of research findings across perspectives. This conceptual convergence, however, is what the authors of this thesis strive for . In view of this,

in order to provide scholars with a comprehensive understanding of the current status of business model building research for start-ups, this thesis provides a systematic review of the research on the business model building mechanism of start-ups based on the perspectives of previous scholars and analyzes the shortcomings that still exist in existing research.

2.3.1 Study on the growth process of start-up companies

The essence of the growth of start-ups differs significantly from that of established firms. First, compared to established firms, which already have a certain level of viability, start-ups have to face the lack of new entry (Liability of Newness), which makes it difficult for them to survive. If they are unable to overcome the deficiencies and grow, start-ups will face an existential crisis. Therefore, while established firms seek to grow in order to consolidate their viability, start-ups pursue growth in order to gain viability. Second, the growth decisions and actions of start-ups do not depend on systemic factors such as organizational structure and behavioral practices, but rather on the characteristics of individual entrepreneurs. The fact that start-ups are essentially a continuation of the personal characteristics of entrepreneurs means that, unlike established firms, start-up growth may depend to a large extent on the personal characteristics and behavior of entrepreneurs rather than on corporate strategies with organizational attributes.

In the face of new entry defects, start-ups that rely on the personal characteristics of entrepreneurs to solve their survival problems are bound to face a high risk of failure in their growth process. There is a gap in the research on how start-ups grow. The main reason for this is that entrepreneurship research tends to conventionally define the growth process of start-ups in terms of "time" with 3 to 5 years being the most commonly chosen measure. This approach of using time variables to define the growth process of start-ups is mainly due to the convenience of data collection, but it has major drawbacks for exploring the growth pattern and process of start-ups. Due to the variability of start-ups' growth performance, some start-ups can reach the level of mature enterprises in six months to a year, while others are still struggling for survival after seven to eight years, and thus remain a start-up. Shepherd et al. found that start-ups do not differ by general factors such as age and size, but rather by three dimensions: product or service, field of operation, and capabilities. This is a useful insight into the growth process of start-ups (Shepherd et al., 2000).

Although it is generally accepted that start-up growth is at the front end of the firm's life cycle and precedes the maturity of the start-up, there is less research on the definition of the start-up growth process and its stage characteristics. The concept of "adolescent deficit" was used by Bruderl & Schussler to classify the growth of start-ups into initial and subsequent stages

(Bruderl & Schussler, 1990). They argue that in the initial phase, which is composed of "adolescence," start-ups have little risk of failure because the start-up's initial resource pool, positive beliefs, psychological commitment, and luck provide a cushion for establishing relationships with other organizations, while insufficient information allows entrepreneurs to make higher judgments about performance. The information is not sufficient to allow entrepreneurs to make high judgments about performance. However, once adolescence is over and performance can be objectively assessed, the risk of failure of a start-up may rise sharply to what is known as the follow-on stage. The initial growth phase. In the "survival stage," the lack of key resources and capabilities, combined with high uncertainty and low legitimacy, cause start-ups to focus on how to solve their survival problems; in the "early growth stage," the uncertainty of the environment increases and the ambiguity of start-ups increases. In the "early growth stage," the uncertainty of the environment increases and the ambiguity of the start-ups grows, and their initial business models have to be adjusted, so they need more extensive resources to support their growth.

In summary, there is no consensus on the definition of the growth process of start-ups, and there are limitations in the time-based classification, which provides room for us to define the growth process of start-ups and classify their growth stages. The growth of start-ups is a multidimensional phenomenon, and there may be multiple key drivers behind their growth. For the growth of start-ups, which is full of uncertainty, the drivers of their growth process and their general patterns are even more difficult to be explored. For this reason, we try to analyze the growth process of new startups from the perspective of business models.

2.3.2 Study on strategy for start-ups

The essence of the growth of start-ups differs significantly from that of established firms. First, compared to established firms, which already have a certain level of viability, start-ups have to face the lack of new entry (Liability of Newness), which makes it difficult for them to survive. If they are unable to overcome the deficiencies and grow, start-ups will face an existential crisis. Therefore, while established firms seek to grow in order to consolidate their viability, start-ups pursue growth in order to gain viability. Second, the growth decisions and actions of start-ups do not depend on systemic factors such as organizational structure and behavioral practices, but rather on the characteristics of individual entrepreneurs. The fact that start-ups are essentially a continuation of the personal characteristics of entrepreneurs means that, unlike established firms, start-up growth may depend to a large extent on the personal characteristics and behavior of entrepreneurs rather than on corporate strategies with organizational attributes.

Business model is about the overall architectural design of the enterprise to create and capture value, and the business model of new enterprises refers to the value creation model centered on entrepreneurial opportunity development and entrepreneurial opportunity utilization, while the business model innovation of new enterprises is the process of innovation for the basic logic and thinking of the value creation approach. The positive impact of business models on the performance of new enterprises is widely recognized by scholars. At the same time, the idea that business models should be continuously and dynamically innovated and adjusted along with the growth of enterprises has also received more and more attention and recognition from entrepreneurship researchers. According to the theory of effectual reasoning, in order to effectively interact with the external environment, new enterprises need to use trial and error to collect external information and iterate continuously to speculate on future business model forms, which includes rapid trial and error and continuous iteration process, i.e. strategic experimentation. Among them, rapid trial and error allows new enterprises to increase the number of trials and errors with limited resources, obtain more external feedback, and seize the opportunity ahead of incumbent enterprises. The existing literature on strategic experimentation based on the logic of effectuation reasoning is mostly based on case studies in different practice contexts, and there are relatively few empirical studies on the relationship between strategic experimentation and business model innovation of new enterprises. It has been more than ten years since the theory of effectuation reasoning and strategy experiments were proposed, but they are still emerging theories in the field of entrepreneurship, and the development and testing of their measurement scales have only emerged in recent years, and the popularization of empirical research is still in need of time. Therefore, the information and experience gained through strategic experimentation, especially trial-and-error learning, is an important source of management knowledge. The current empirical research literature lacks studies on the micro mechanisms of strategic experimentation for business model building process.

The literature on strategic experimentation originally originated from studies on strategic change but these studies were mainly focused on established firms and not applicable to new firms. This is because the business objectives of mature firms are relatively stable, and strategic experimentation is only an adjustment and reorganization of existing strategies, i.e., a transition from one steady state to another, with low frequency and small changes in various strategic dimensions; whereas for new firms, strategic experimentation is not an adjustment or reorganization of existing business models, but a creation process from scratch, including a series of rapid trial-and-error and strategic iterations aimed at exploring the internal and external environment of the new venture. It is a series of rapid trial-and-error and strategic iterations

designed to explore the internal and external environment of the start-up to improve fit with the environment and reduce environmental uncertainty. The process involves rapid changes and minor adjustments in the various strategic dimensions. Because of this lack of knowledge about themselves and the external environment, new companies must use trial and error to find ways to create value based on what they can afford to lose and what resources they have at their disposal. Thus, for new firms, strategic experimentation is the process of making rapid and small adjustments along different strategic dimensions and trying to identify and build a viable competitive strategy base. The strategy experimentation process consists primarily of trial-and-error learning and strategy iteration. This is a continuous feedback process until the new business strategy is compatible with the internal and external environment. The core of this process is rapid strategic iteration through trial-and-error learning, and its resources are invested in an incremental manner.

Due to the complexity of the structure and high uncertainty of the environment from an entrepreneurial perspective, the construction of a new firm's business model is an innovation process that includes multiple stages of trial-and-error learning, and is never destructive innovation. Trial-and-error learning during the strategic experimentation process prompts new enterprises to closely interact with various stakeholders, explore and try out various business models at low cost, and obtain a large amount of feedback information and knowledge, which helps new enterprises explore the internal and external environment, actively develop and utilize various entrepreneurial opportunities, and realize new value creation models; at the same time, the large amount of feedback data and information brought by trial-and-error learning helps new enterprises better At the same time, the large amount of feedback data and information brought by trial-and-error learning helps new enterprises better understand the industry and their own characteristics, rapidly accumulate experience and knowledge, modify entrepreneurial behavior, reduce uncertainty and entrepreneurial risk, and gradually figure out and conclude a more efficient business model.

Strategic experimentation is an incremental approach to resource investment, consisting mainly of small-scale trial-and-error learning and continuous strategic iteration, with low-cost exploratory characteristics. It is a low-cost exploration process in which failure and mistakes are frequent, but the cost of failure is small and not devastating to the entrepreneur and his or her team, and the lessons learned through trial and error can have unexpected effects in future actions and accumulate a wealth of entrepreneurial knowledge. Through strategic experimentation, new firms continuously acquire necessary entrepreneurial knowledge from the external environment based on counter-information from various stakeholders in their

entrepreneurial practice, and share and utilize it on a firm-wide basis. In essence, the process of creating, accumulating, and sharing various entrepreneurial knowledge is entrepreneurial learning, so strategic experimentation provides a rich source of opportunities and materials for new ventures in conducting challenging reflections in the face of rapidly changing nascent markets, policies, and technologies.

2.3.3 Strategic entrepreneurial behavior of start-ups

Strategic entrepreneurship has received extensive attention from scholars in the field of management as a research area that integrates strategic and entrepreneurial perspectives, and how to balance opportunity seeking and advantage seeking is both a challenge for strategic entrepreneurship practice and a central issue that is currently the focus of research in the field (Ireland et al., 2003; Kyrgidou & Hughes, 2010). In their studies, scholars have pointed out that the high uncertainty of start-up entrepreneurial situations in nascent markets drives firms to often face challenges in making relevant strategic decisions, and that effective strategic entrepreneurial decision logic is key to guiding firms' strategic entrepreneurial behavior to simultaneously seek opportunities and advantages (Wiltbank & Sarasvathy, 2002). However, from the existing studies, scholars lack in-depth theoretical discussions on strategic entrepreneurial decision logic, and even fewer scholars have constructed a corresponding research framework on it as an antecedent of strategic entrepreneurial behavior. effectuation theory proposed by Sarasvathy argues that in a high uncertainty situation, the entrepreneur's or entrepreneurial firms, Sarasvathy suggests that in a high uncertainty situation, the decision logic of an entrepreneur or entrepreneurial firm includes not only the traditional goal-oriented logic (causation) of choosing the means to achieve a given goal, but also a means-oriented logic of choosing the goal that can be created by the given means, which Sarasvathy calls means-oriented. Effectuation (Sarasvathy, 2001). Scholars generally agree that goal-oriented and means-oriented are two types of decision logics that differ significantly in many aspects and are important for the survival and growth of entrepreneurial firms (Chandler et al., 2011; Wiltbank & Sarasvathy, 2002). In recent years, means-oriented theory as an emerging entrepreneurial perspective has gradually gained attention in strategic entrepreneurship research, although some scholars, refer to the goal-oriented and means-oriented proposed by this theory as strategic entrepreneurial decision logic in their research, however, they do not theoretically argue and explain it in depth.

The strategic entrepreneurial decision logic is the decision logic for the implementation of strategic entrepreneurial behavior, but the relevant theoretical basis is scattered and lack of

systematic discussion. Firstly, based on the existing literature at home and abroad, this thesis compares the core ideas and behavioral elements of strategic entrepreneurship, and on this basis, the essence of strategic entrepreneurial decision logic, this thesis starts from means-oriented theory to argue that means-oriented and goal-oriented as the theoretical basis of strategic entrepreneurial business model decision, so as to analyze the characteristics of strategic entrepreneurial decision logic types and build a research framework to explore the influence of strategic entrepreneurial business model decision logic on business model construction. This thesis provides an important theoretical basis for analyzing the characteristics of strategic entrepreneurial decision logic and constructing a research framework to explore the influence mechanism of strategic entrepreneurial business model decision logic on business model construction.

Core Ideological and Behavioral Elements of Strategic Entrepreneurship:

Strategic entrepreneurship as an intersection of strategy and entrepreneurship research has received increasing attention in recent years, and scholars generally agree that strategic entrepreneurship helps create and capture individual, organizational, and/or social value . The relationship between strategy and entrepreneurship has been extensively elaborated by scholars in the field of strategic entrepreneurship research, who point out that in the strategic entrepreneurship process, strategic management is not just planning but should be a strategic resource integration thinking, while the identification of entrepreneurial opportunities provides the firm with overall operations by providing a rhythm or direction (Ireland et al., 2003; Kuratko & Audretsch, 2009). As an integrated perspective of entrepreneurship and strategy, scholars consider strategic entrepreneurship as entrepreneurial activities with a strategic perspective to create and capture value, and its core idea is reflected in the simultaneous search for opportunities and advantages . Accordingly, scholars have dissected and generalized the core behavioral elements of strategic entrepreneurship from the perspective of entrepreneurship and strategy (Kyrgidou & Hughes, 2010).

From an entrepreneurial perspective, the focus of entrepreneurial behavior is mainly on identifying new opportunities that are constantly emerging to create value and wealth, and opportunity identification is a key part of the entrepreneurial process, which reflects the firm's search and exploration of opportunities . There are two perspectives on the sources of identified opportunities: the opportunity discovery perspective and the creation perspective. Among them, the opportunity discovery view suggests that entrepreneurs need to systematically examine environmental changes to identify objective opportunities formed by external shocks such as industry, market, and technology; while the creation view suggests that entrepreneurs gradually

identify potential opportunities during the practical process of interacting with external stakeholders and shape and construct them through subjective efforts (George & Bock, 2011).

From a strategic perspective, the core of strategic management behavior lies in how to create and sustain competitive advantage in the marketplace (Ireland et al., 2003). Scholars in the field of strategy generally agree that having valuable, scarce, and hard-to-imitate resources provides opportunities for firms to create competitive advantage, and that firms gain competitive advantage when these resources are effectively integrated to form capabilities (Ireland et al., 2003; Yi et al., 2020). As Schumpeter pointed out that integrating resources in a valuable way and developing new resource portfolios drive innovation, resource integration is a key way for firms to develop new products or services to gain competitive advantage (Schumpeter, 1934). Resource integration includes the expansion and optimization of the resource portfolio as well as the reconstruction, which helps to renew existing capabilities and build new ones, and the unique capabilities formed through resource integration are what differentiate a company from its competitors (Yi et al., 2020).

In an integrated perspective of entrepreneurship and strategic management, strategic entrepreneurial behavior encompasses not only entrepreneurial capabilities to explore new opportunities, but also the process of resource integration to build and sustain competitive advantage, and entrepreneurial capabilities and resource integration are not independent of each other, but are often inseparable and mutually reinforcing (Kyrgidou & Hughes, 2010). On the one hand, opportunity identification provides firms with directions for entrepreneurial strategy implementation, which will motivate firms to effectively integrate internal and external resources thus transforming opportunities into value and competitive advantage quickly on the other hand, firms discover and structure the relationship between means and outcomes to identify new opportunities as they flexibly integrate internal and external resources to gain advantage (Ireland et al., 2003; Kuratko & Audretsch, 2009). Combined with scholars' definitions of entrepreneurial capabilities, this thesis argues that entrepreneurial capabilities include opportunity identification capabilities and opportunity exploitation capabilities (Zahra et al., 2006). Opportunity recognition capability is the ability to perceive, discover, and create new opportunities in new ventures, which is the logic of exploration, while opportunity exploitation capability emphasizes the ability to select and grasp opportunities, which is the logic of exploitation (Zahra et al., 2006). According to organizational learning theory, the construction of organizational capabilities relies on certain learning mechanisms. The accumulation, expression, and decoding of knowledge contribute to the construction of organizational practices that are the core building blocks of organizational capabilities . Zahra

et al. also point out that new firms may learn most if they purposefully experiment, in which they carefully measure what they are doing, define roles, and clearly communicate the results in order to gain valid knowledge to build their capabilities (Zahra et al., 2006). New firms purposefully accumulate the necessary entrepreneurial knowledge, select and retain diverse knowledge after obtaining market feedback, and thus share this knowledge across the firm to develop organizational practices that guide new firms in identifying and exploiting opportunities and thus building entrepreneurial capabilitie. Especially in the context of transition economies, institutional changes and accelerated marketization have given rise to diverse entrepreneurial opportunities, and Internet technologies have provided a broad platform for opportunity creation in emerging markets (Dixon et al., 2010). With such favorable external entrepreneurial support conditions, the development of entrepreneurial capabilities of new firms is more dependent on their own learning mechanisms. Moreover, rapid market and policy changes as well as technological changes in this context create numerous opportunities for organizational learning . In order to adapt to the rapid changes in the environment, new firms need to build entrepreneurial capabilities through acceleration. Entrepreneurial capabilities are important for the acquisition and maintenance of competitive advantage in new firms (Teece, 2010; Zahra et al., 2006). Specifically, opportunity identification capabilities facilitate the search and perception of diverse new opportunities for new firms to gain new competitive advantages, while opportunity exploitation capabilities help new firms to attract, integrate, and utilize resources to maintain existing competitive advantages (Teece, 2009). In China's unique economic context of transition from a planned to a market economy, new markets and institutional systems will gradually replace the old ones, and the flourishing of emerging markets will cause rapid changes in the rules and patterns of competition, and the survival and development of new firms will be inextricably linked to entrepreneurial capabilities (Dixon et al., 2010).

In summary, strategic entrepreneurial behavior is reflected in the mutual promotion of entrepreneurial capabilities and resource integration to achieve a circular interaction of opportunity exploration and advantage acquisition so as to seek opportunities and advantages simultaneously. This thesis focuses on the mechanism of the role of entrepreneurial capabilities on the business model construction of start-ups in nascent markets in the context of transition economies.

Characteristics of strategic entrepreneurial decision making and means-oriented theory:

The characteristics of strategic entrepreneurial decision making as a decision to implement strategic entrepreneurial behavior in a firm are mainly related to the firm's opportunity

identification and resource integration activities, the basis and objectives of such decisions cannot be separated from the firm's opportunities and resources, and the adoption of strategic entrepreneurial decision logic depends on the degree of uncertainty in the decision situation . It has been shown that the core elements of means orientation and goal orientation include means (means) and goals (goals), with means at the firm level referring to various types of resources such as physical, human, and organizational resources, and goals corresponding to external objective opportunities as well as subjectively created opportunities, while the use of goal orientation and means orientation depends on the level of environmental uncertainty . It is evident that means orientation and goal orientation are closely related to strategic entrepreneurial decision making, as Reymen et al. (2015) referred to means orientation and goal orientation as strategic entrepreneurial decision logic in their study. Originally proposed by Sarasvathy, this scholar pointed out that traditional management theory, which follows the rational human assumption, assumes that decision makers have goal-oriented rationality (causation reasoning), but the high uncertainty of the entrepreneurial situation and the limited rationality of human beings challenge the traditional goal orientation (Sarasvathy, 2001). In this context, Sarasvathy integrates the theoretical perspectives of Weick to propose the effectuation theory, which argues that firms/entrepreneurs not only adopt goal orientation, i.e., choose the optimal combination of resources based on stated goals, but also choose the optimal combination of resources based on available resources (Sarasvathy, 2001; Weick, 1995). This theory suggests that the firm/entrepreneur not only chooses the optimal combination of resources based on the set goals, but also chooses the goals it can create based on the resources at hand, i.e., it adopts an effectuation. In this regard, goal orientation emphasizes goal (opportunity)-driven, which seeks to maximize expected returns through competitive market analysis and business planning, and uses existing knowledge to predict the future to avoid contingencies, while means orientation focuses on means (resource)-driven, which exploits contingencies within acceptable losses through strategic alliances, prior commitments, maintaining flexibility, and short-term experimentation to achieve control over the future (Chandler et al., 2011; Wiltbank & Sarasvathy, 2002).

According to strategic entrepreneurial decision characteristics and means-oriented theory, goal orientation and means orientation are embodied in two types of strategic entrepreneurial decision logics, opportunity-driven and resource-driven, respectively, which drive firms' opportunity identification and resource integration. Specifically, goal orientation motivates firms to collect and analyze external information as comprehensively as possible to quickly identify opportunities in the environment, and to develop sophisticated strategic plans driven

by opportunities to effectively integrate resources to maximize expected returns; while means orientation motivates firms to seek valuable and innovative ways to integrate resources to identify new opportunities driven by the resources at hand . Therefore, a combination of goal- and means-oriented approaches can help firms achieve a positive interaction between opportunity identification and resource integration. From a strategic entrepreneurship perspective, the interaction between opportunity identification and resource integration reflects the essence of strategic entrepreneurship i.e., the simultaneous search for opportunities and advantages . In summary, entrepreneurial capabilities and resource base are the key logic for firms to make strategic entrepreneurial business model decisions. Based on this, this thesis will analyze in depth the mechanism of the influence of the characteristics of entrepreneurial capabilities and resource base types on business model constructs and construct a corresponding research framework.

2.4 Literature review conclusions

This chapter first reviews the research on the evolution of business models of startups from different perspectives, and then, on the basis of analyzing the shortcomings of existing research, it provides an outlook on the relevant research in this thesis in order to explore the mechanism of the business model building process of startups.

Most of the literature tends to classify the growth stages based on "major problems" and adopts a stage model or life-cycle theory to describe the growth process of a new venture as a process of solving the major problems faced by the entrepreneurial team at different times. For example, Vohora et al. found that start-ups go through five stages of development and that there are critical junctions between adjacent stages that can be overcome before the start-up can move on to the next stage of development, or else growth will stagnate . Kazanjian and Drazin propose a four-stage model based on a case study of a new technology firm, viewing each growth stage as the entrepreneurial team's response to the dominant problem faced by the firm during its growth . Existing process theories not only provide theoretical tools to describe the phenomenon of new venture growth and sort out the seemingly disorderly start-up growth process into some kind of structure, but also can help entrepreneurial teams anticipate future challenges. However, the existing process theory of new venture growth dominated by life cycle theory has many shortcomings. First, scholars such as J. Yang suggest that new venture growth is essentially a dynamic learning process . Similarly, Ambos and Birkinshaw point out that prototype transitions in start-ups are entrepreneurial responses to elements of the prototype that

were overlooked in the previous development period and that there is no predictable sequence of transitions . Thus, there is a possibility of nonlinear and no purposeful growth of start-ups. First, most theories of the growth process of start-ups rarely consider the effect of uncertainty. scholars such as McGrath has suggested that the prominent problem in the growth of start-ups is the high level of uncertainty . Second, scholars such as Hu & Zhang suggest that existing process theories seldom explore the important process of adjusting and exploring business directions for new firms . The above scholars' arguments are based on case evidence of uncertainty about the direction of growth of start-ups. How to cope with it is the key to the growth and survival of start-ups. However, many process theories do not consider this specificity in the growth of start-ups. Finally, while start-up growth is a multidimensional growth phenomenon, the existing literature lacks an integrated deconstruction of the dynamic linkages between the different growth dimensions. Although Ambos and Birkinshaw have made some explorations in this area . However, there is still much room for exploring the patterns or laws of the growth process of new enterprises, which deserve more in-depth study. The business model proposed by Teece is the "architecture of the value capture, delivery and creation mechanism", which describes "the way in which a firm delivers value to customers and converts customer payments into profits" . As a "business structure" or "model" proposed by Li Dong et al. business models can provide a degree of predictability for firms operating in uncertain environments and thus help reduce the risk of failure. In the field of entrepreneurial practice, venture capitalists base their investment decisions on the viability of the business model, and several theoretical studies conducted by Zott point out that the design and implementation of the business model is a strategic issue for the fate and survival of new enterprises . In particular, Vohora et al. proposed that. A clear business model can respond to the uncertainties faced by start-ups in their early years, thus helping them to increase their probability of survival and growth . Therefore, business model theory is particularly applicable in new venture growth situations where there is a high degree of uncertainty. Morris et al. are the most influential and well-known study of business models for start-ups or entrepreneurship in academia (Morris et al., 2005). Based on the literature, the authors proposed a six-factor theory of business models for start-ups and meticulously sorted out the key elements that start-ups should consider when designing their business models. George and Bock proposed an opportunity-centered business model based on 151 surveys of entrepreneurs and deconstructed business models into three dimensions, including value structure, transaction structure, and resource-tie value structure, from an entrepreneurial perspective The concept of opportunity-centered business model . The authors point out that business opportunities should be assessed

in terms of the perceived importance of business model dimensions, whether for new venture growth or venture creation or change, and that any opportunity should be examined in the context of different dimensions. Thus, it appears that a business model concept that integrates multiple dimensions is valuable for observing the growth of start-ups - it provides a conformational perspective that emphasizes the integration effect and different dimensions of observation, and is therefore an important theoretical tool for observing the growth process of start-ups.

1. Overall, there are relatively few studies on the process of business model construction for start-ups in nascent markets. Existing scholars believe that the business model adjustment process is a trial-and-error learning process, but the process of business model trial-and-error learning is still unclear, and its main process and the mechanism of action with business model elements need to be further revealed. Scholars have not yet explored in depth the patterns of different business model adjustments. Therefore, this thesis focuses on the mechanism of business model construction and the process of such.

2. In the study of business models, the static perspective is to divide the entire business operation system of an enterprise into several different structures or elements, and then new business models can be created by analyzing changes in these structures or elements, or changes in the relationship between structures and elements. There is no denying that a business model is a systemic concept that does require an internal coordination to create value. However, such studies are quite theoratical to some extent since it is not possible for a start-up company to divide a model into several elements in the process of business model construction, and then rearrange and combine them to identify the most optimal business model. Although this research approach is theoretically self-explanatory, its static perspective cannot fully explain the value creation process emphasized by business models and has limited significance in guiding enterprise business model innovation. And this approach to innovation fails to focus on the changing environmental conditions and the revolutionary improvement in customer value that can result from them.

3. The dynamic perspective uses value chain theory as the theoretical background, which is seriously out of touch with reality. With the development of Internet technology, the cooperation between enterprises have gone beyond the established value chain, integrating resources across borders, forming a complex value network around the core competence enterprises, reducing costs and creating new value through the efficient cooperation of members within the network. The research in business model validates the dilemma of management research found: management has borrowed a lot from related disciplines, which has contributed

to the development of management itself, but also brought about the questioning of the legitimacy of the discipline; in order to maintain the legitimacy of the discipline, scholars keep moving towards “scientification”, but face the challenge of “practical relevance”.

4. Although the research on business model has been conducted for a long time at home and abroad, it should be pointed out that the current business model research is mainly on the business model of incumbent enterprises, and the existing research on business model construction not only tends to be “scientific” and the research with practical relevance is superficial. How to develop a process and mechanism for building business models for start-ups in nascent markets that is both scientific and practical is the target of this thesis. This thesis was carried out ideally without any conceived theories and expected hypotheses, avoiding preconceived theoretical views or propositions that bring bias to the researchers of this thesis.

5. Mullins and Komisar point out that the growth of a start-up is a process of testing its business assumptions and matching the elements, and that the initial planned business model will continue to learn and adjust as it is implemented, and end up becoming another business model (Martins et al., 2015). Thus, maintaining flexibility is critical to the growth of start-ups. Strong evidence for this is provided by Wiltbank and Sarasvathy, who found in an empirical study of 200 new ventures that business models often change dramatically during the evolution of new ventures due to changes in the “means” at the disposal of the new venture . In addition, Andries et al. propose evolutionary models such as parallel experimentation and focused development based on multiple case studies to address the evolutionary patterns of business models of start-ups (Andries et al., 2008). However, the common shortcoming of the above studies is that they do not propose a clear process theory of business model construction for start-ups, nor do they carefully deconstruct the business model concept of start-ups.

6. Existing studies on business models of start-ups do not thoroughly analyze the mechanism of action and causality between different dimensions of means orientation and business models of start-ups, entrepreneurial behavior. It is necessary for future research is to explore the logical relationship between the different constitutive dimensions of means orientation, such as focus on experimentation, tolerance of loss, maintenance of flexibility, and focus on control, and entrepreneurial learning, and their interaction on the business model generation of start-ups.

7. It is necessary to build an integrated research framework for business model generation of start-ups by analyzing the inner logical relationship of business model construction of start-ups through multy-cases on the basis of existing research from different perspectives. The generation of business models for start-ups should be the result of a combination of factors.

Existing studies only focus on a certain adjustment mechanism, ignoring the similarities and differences between different adjustment mechanisms, such as the means-oriented mechanism in learning mechanism and the business model experiment in empirical learning, both of which essentially emphasize the importance of experience and can therefore be classified under the dimension of focusing on experience. The interaction with stakeholders through meaning-making and meaning-giving in the social construction mechanism and the pursuit of stakeholder commitment in the means orientation are both essentially aimed at reducing uncertainty and gaining stakeholder support, so they can be grouped under the dimension of stakeholder commitment. Future research is required to construct an integrated analytical framework of business model adjustment mechanisms. In summary, precisely because of the importance of business models for the growth and survival of start-ups, a new idea in the study of start-up growth is put forward: how to seek and build a viable business model. This thesis will mainly refer to the ideas of Morris and other important scholars to theoretically interpret the process of business model building for start-ups: how entrepreneurs of start-ups dynamically evolve their business models, and this study tries to give a preliminary exploration of the above issue. The research method under multi-cases anasis serves as an important tool in this thesis to study the process of constructing business models for start-ups, hoping to expand existing theories and propose new insights. Here is the research question-why, how an when entrepreneurs of start-ups in nascent markets build out the intrinsic mechanics of their business models.

Chapter 3: Study Design and Sources

This thesis focuses on the research question of "the process and mechanism of business model construction for start-ups in nascent markets" and uses a case study approach to conduct specific research. Six case companies were selected as the primary source of information for this study, and then the case study approach was used for the next step. The main rationale is that: first, the research question requires the interpretation of both the "How" and the "Why" of the business model construction mechanism of the start-ups, and the micro-dynamic examination of the business model construction process of the start-ups. The case study is a thorough and complete research strategy that is very effective in understanding the "how" and "why" questions . Secondly, this study aims to explore the business model construction process behind the entrepreneurial actions of start-ups in nascent markets that have not been effectively explained by existing theories, and the case study approach is well suited for the purpose of this study because it refines, builds, and develops new theories from practice. In addition, compared to statistical analysis methods, case data-based analysis methods are not only able to explore the dynamic processes of management practices in greater depth, but also help to reveal the complex mechanisms of influence.

3.1 Selection and design of research methods

This study expects to examine the process of business model construction for start-ups in nascent markets and present the main mechanisms of business model adjustment as a whole to reveal the deep-seated reasons behind the phenomenon. For this purpose, this thesis adopts an exploratory multi-case study. Multi-case studies can be based on case studies, and all cases can be compared and analyzed to confirm common features and abandon unique features to form conclusions, thus ensuring strong generalizability of research findings. Specifically, a multi-case study design is carried out using "replication logic", where a set of cases is treated as a series of experiments, and each case is used to prove alive and disprove a set of observations .

Given the exploratory nature of this study, in-depth interviews were conducted with the case companies, and only by getting up close and personal with the start-up entrepreneurs could the researcher truly understand, gain insight and appreciation of the various key decisions, activities and events that went into the construction of the business model with their development start-ups. Therefore, a research method based on face-to-face in-depth interviews

is particularly necessary. On the one hand, the process of business modeling for start-ups requires a rich historical and real-life data to link decisions, actions and events at different points in time, to discover and confirm the possible cause-and-effect relationships between them, and to distill the patterns behind the phenomenon of business modeling for start-ups in a scientific way to form an enlightening middle-level theory derived from the data. On the other hand, it is possible to collect a large amount of rich and informative primary data for the theoretical exploration of business model construction mechanism, which makes it possible to discover the real story of how Chinese start-up entrepreneurs think and act; field-based research is an effective data collection method for different types of qualitative research by involving the researcher in the field. The purpose of this thesis is to uncover the process and mechanism of business model construction for start-ups in nascent markets, and it is more appropriate to use this approach to collect materials. As the research question in this work is an exploratory one, the first round of interviews was loosely structured as a guided investigation to obtain some key information and was designed as semi-structured focused questions to obtain more in-depth first-hand information. Investigating the business model formation of startups in nascent markets requires the researcher to be quite problem-aware, by which is meant a high sensitivity to the subject of investigation.

In this thesis, we study the process and mechanism of business model construction of start-ups in nascent markets, taking the technology industry in the mobile Internet era as the background, and select cases in this industry mainly based on the following considerations: First, the mobile Internet technology industry is in a period of rapid change, belongs to the emerging industry, has a broad market space, and many new start-ups have appeared. As there is no mature business model in China, foreign business models in this industry are not perfect and cannot be copied completely, so new start-ups are trying to build their own business models in practice. Second, the rapid development of mobile Internet technology in China, coupled with the rapid changes in the external environment, the business models of such start-ups are adjusted relatively frequently and there is material for analysis. Third, since the industry is dominated by start-ups, being able to trace the information from the beginning of the start-ups' establishment can avoid information omission and ensure the integrity of information.

thesis investigates the process and mechanism of business model construction for start-ups in nascent markets under multi-cases analysis. Based on this method, this study first conducted case company filtering, collected data, in-depth interviews, and then coded and categorized all information, mainly by open coding, axial coding and selective coding. Coding is done by ongoing comparison of events and concepts in order to form more coded domains and features,

as well as to conceptualize the data. Open Coding refers to the process of defining the concepts found in the data, and the analysis of attributes and categories in the early stages of data analysis. Axial coding is the process of exploring the main clues of a category in order to discover and construct the connection between the main category and the initial category. Selective coding selects core categories after the main axis codes and focuses the analysis on those codes that are relevant to that core category. For the specific operational steps of the research process, the author mainly refers to operational procedures 1. theoretical sampling; 2. data collection; 3. level-by-level coding to generate concepts; 4. iterative comparisons between data and concepts; 5. forming theoretical concepts and establishing intrinsic associations between concepts; and 6. constructing theories and evaluating them.

For the number of multiple case studies, Eisenhardt believes that the most appropriate number of cases in a multiple case study is 4-8 . In addition, the selection of cases should take into account both the accessibility of information and the representativeness of the company in order to improve the accuracy of the sample information and reasonably reduce costs. Yin believes that the number of multi-case studies should be 6-10. In this thesis, six companies were selected as case study samples .

In summary, a multi-case analysis approach based on case data not only provides deeper insight into the dynamic processes of management practices, but also helps to reveal the complex mechanisms of influence.

3.2 Case selection

This section will cover the following three aspects. They are sample selection criteria, filtering process of the sample, and company profile.

3.2.1 Sample selection criteria

This study followed the theoretical sampling principles of case studies . The basic criteria for selecting the sample were to see which cases would best answer the research questions. The authors finally set the sampling criteria after comprehensive and repeated exploratory research:

1. Process integrity and establishment time requirements. Our research context encompasses the mobile Internet industry in the 21st century. In this period, innovative technologies such as cloud computing, m-commerce, mobile Internet O2O, artificial intelligence, and virtual reality began to gain wide recognition. This period is of interest to scholars because of the proliferation of nascent markets in the industry that began to gather and

the subsequent explosion of startup spin-offs. The author of this thesis focus on the building process of business model in six start-ups. In this thesis, the researcher selected six companies among the enterprises founded from the beginning of 2012 to the end of 2020. This particular of time is special because it was at the height of ambiguity in these industries, i.e., just before the rapid development of the mobile Internet. This point in time is also now far enough away to allow the researchers to observe patterns in the chronology; yet close enough to collect accurate and detailed data.

2. Technological variability. If repeated patterns can be found in cases with high variability, the external validity of the study is also more assured and the findings will be more convincing. This thesis selects the sample based on the three basic technology classifications proposed by Thompson . Since there are significant differences in the nature of value creation under different technology categories (Stabell & Fjeldstad, 1998), it can be assumed that the idea and process of constructing business models based on different technology categories will have significant differences. In addition, this thesis takes into account the respective variability of the business model constructs of the selected companies themselves, i.e., the observation of the dynamics of business model construction process helps to clearly identify the changing patterns .

3. The chosen companies should demonstrate the typical characteristics of business model construction under the relevant theories.

4. The selected firms should have influence in regional or national markets, have corporate institutions and mature organizational structures that can be visited on site, and other information can be obtained through publicity to form triangulated cross-evidence. Considering that there should be some variability in the case sampling in order to explore the common features of the business model constructs and increase the universality of the research findings, the six case companies, in addition to meeting the above-mentioned theoretical sampling requirements, also shows the following features: (1) In terms of enterprise size: they are all small and medium-sized enterprises, but the specific size varies. The size of Sposter is bigger than ddd.online; the size of ddd.online is bigger than Me +; Me +is bigger than MEPAI; MEPAI is bigger than Sanside; Sanside and Intelligence Control Technology are similar in size (2) All six companies are technology-based companies, but these six companies are in different specific industries. Sposter deals with locker delivery business in community； ddd.online provides a 3D tool and creative Internet community; Me + is an operation SaaS payment platform in the same city; MEPAI is a platform for photography service; Intelligence Control Technology is a provider of IoT terminal control products and technologies; Sanside engages in an intelligent security integration business; (3) In terms of the nature of the business: although

they are private enterprises, Sposter merged into the small and medium-sized enterprises listed on the board, while ddd.online merged into the A-share listed Visual China Group. The above-mentioned similarities and differences not only control the attributes, nature and size of start-ups for the theory constructed in this thesis, but also help to test the boundaries of applicability of the constructed theory to some extent.

3.2.2 Filtering process of the sample

After determining the critic and collecting of the data, the writer gained a diverse sample. The author of this thesis selected companies from five different kinds in nascent markets: virtual marketplaces, digital services, e-commerce, artificial intelligence, distributed enterprise software and networking hardware. In addition, the author also selected companies according to different startup contexts, different regions, startup teams and startup capital. Of these entrepreneurs, some were given the opportunity to start a business by chance; some had a technology but were looking for a market; others were experienced executives with detailed business plans in hand and in close contact with professional investors. The table 3.1 summarizes their major differences. Studying a diverse group of firms provides a stronger basis for theoretical constructs than studying a group of firms of the same type.

Table 3.1 Start-up characteristics

Firms	Intelligence Control Technology	ddd.online	Sposter	Me +	MEPAI	Sanside
Area	Network Hardware	Digital Services & Enterprise Software	Artificial Intelligence & Enterprise Services	E-commerce	Digital Services & Virtual Marketplace	Artificial Intelligence & Enterprise Services
Startup Team	A team of 2 engineers	Technical Experts	Three experienced executives and corporate venture capitalists	Single Entrepreneur	Single Entrepreneur	A team of three
Entrepreneurial context	creating technology to respond to opportunities	own the technology, but seek the opportunity	purchasing technology to address opportunities	searching for some wide-ranging opportunities	stumbling upon opportunities	searching for some wide-ranging opportunities
Initial capital	self-owned funds, friends and family financing	self-owned funds, friends and family financing	Corporate Venture Capital	self-owned funds, friends and	self-owned funds, friends and	self-owned funds

				family financing	family financing	
Interviewee	founder/ general manager	Founder / Shareholder / General Manager / Partner	Founder / General Manager / Business Development Manager / Product Manager	Founder / General Manager / Partner	Founder / Shareholder / General Manager / Competitor	founder/ general manager

Given that our aim is to gain an understanding of how startups construct their business models, the author adopts a long-term study design that allows the author to exhaustively track multiple business model decisions over the first three years of a company's establishment. This research design requires companies provide rich archival profiles and be willing to collaborate over multiple interviews in different forms, which further limit the scope of the sample selection. Eventually,the previously mentioned six companies are selected. Each company has a detailed records, which is necessary to acquire the dynamic nature of business model formation over time. According to Siggelkow (2007), the selected subjects in this thesis are based on criteria that could not be met by randomly selection . Although our sample firms are more successful than most start-ups, they demonstrate more variability in business model decisions and outcomes (e.g., failed actions, critical mistakes), which provides a different reference for our study of business model construct mechanisms.

According to the selection standard mentioned above, the author chose six firms--Intelligence Control Technology, ddd. online, Sposter, Me +, MEPAI and Sanside. Following the theoretical sampling procedure, this thesis first conducts interviews with one of the companies (Sposter), and observe and interview those characters who are most likely to provide rich information to the question of business model construction mechanism. For instance, an initial interview was conducted by the researcher with the Vice President of Sposter, focusing on the formation of the target company's start-up business model. After the interviews, all the materials were compiled and analyzed, and based on the results of the analysis, the founders or executive teams of each of the six companies were interviewed again.

3.2.3 Company profile

According to Yin's suggestion, given the proper conditions or resources, the study should recruit as many firms as possible. A case study does not focus much on the number of samples, but the richness of the sample and the depth of the study. This study selected six representative

start-ups from a wide range of candidates that have been tracked over time. The basic information of the case company is shown in the table 3.2 below.

Table 3.2 The basic information of the case company

General information	firms	Intelligence Control Technology	ddd. online	Sposter	Me +	MEPA I	Sanside
	nature	private	incorporated into a listed company	incorporated into a listed company	private	private	private
	area	Network Hardware	Digital Services & Enterprise Software	Artificial Intelligence & Enterprise Services	E-commerce	Digital Services & Virtual Marketplace	Artificial Intelligence & Enterprise Services
	founding year	2015	2015	2012	2013	2014	2013
	total assets	10 million	200 million	500 million	50 million	20 million	10 million
	employees	20 people	60 people	60 people	50 people	30 people	70 people
service overview	business description	Terminal products and technical services for IoT communication and control	3D design software and 3D innovative content community	Community smart delivery lockers and value-added services	Crossto wn business district operation and financial services	Build an O2O supply and demand platform for photography service market based on in-depth socialization of image life	Intelligent Security System Integration Business
	founding process	successfully created the IoT control terminal device business and accomplished the	successfully created 3D/AR content and tools platformand accomplished the business	successfully create community smart delivery locker and accomplished the	successfully created a SaaS mall operator business and accompl	successfully created a photography service platform and	successfully created the information service business and

	business model building process	model building process	business model building process	ished the business model building process	accomplished the business model building process	accomplished the business model building process
starting year	2017	2017	2014	2014	2016	2016

The data in the table is as of May 2021, from in-house information, official website and annual reports.

3.3 Data collection

Following the proposal of multi-cases analysis research this study used field research methods to conduct fieldwork on six sample companies including site visits, downloading applications, experimenting product samples, in-depth research and interviews with the founders and senior. Tracking the construction of each startup's business model for the first five years of its existence is the focus of the data collection. In order to gain a more comprehensive understanding of the start-up business model construct, the author collected data from two main data sources: archival data and on-site interviews.

3.3.1 The collection of archival data

This thesis focuses on the process and mechanism of business model construction for start-ups in nascent markets. This study uses an in-depth research approach, which is likely to be subject to various biases if it relies solely on the interviewees' review of the process of start-ups. Therefore, having access to a wealth of historical documents not only helps to triangulate the data and thus reduce bias, but also helps to provide the interviewees with highly recallable clues, thus facilitating the search process. To the surprise of the researcher, some start-ups paid much attention to the record of historical events, which greatly facilitates this study. Therefore, in subsequent studies of case companies, the researcher, when entering the start-up site to begin the first interview, asked for in-house documentation whenever possible. Next, interviews were conducted on the basis of the first preliminary document collection, and a second round of data collection was conducted based on the theoretical sampling principles and research questions, thereby continuously obtaining rich case data and keeping relevant records.

This study expects to examine the process of business model construction for start-ups in nascent markets and present the main mechanisms of business model adjustment as a whole to reveal the deep-seated reasons behind the phenomenon. For this purpose, this thesis adopts an exploratory multi-case study. Multi-case studies can be based on case studies, and all cases can be compared and analyzed to confirm common features and abandon unique features to form conclusions, thus ensuring strong generalizability of research finding. Specifically, a multi-case study design is carried out using "replication logic", in which a set of cases is treated as a series of experiments, and each case is used to disprove a set of observations by proving alive .

Given the exploratory nature of this study, in-depth interviews were conducted with the case companies, and only by getting up close and personal with the start-up entrepreneurs could the researcher truly understand, gain insight and appreciation of the various key decisions, activities and events that went into the construction of the business model with their development start-ups. Therefore, a research method based on face-to-face in-depth interviews is particularly necessary. On the one hand, the process of business modeling for start-ups requires a rich historical and real-life data to link decisions, actions and events at different points in time, to discover and confirm the possible cause-and-effect relationships between them, and to distill the patterns behind the phenomenon of business modeling for start-ups in a scientific way to form an enlightening middle-level theory derived from the data. On the other hand, it is possible to collect a large amount of rich and informative primary data for the theoretical exploration of business model construction mechanism, which makes it possible to discover the real story of how Chinese start-up entrepreneurs think and act; field-based research is an effective data collection method for different types of qualitative research by involving the researcher in the field. The purpose of this thesis is to uncover the process and mechanism of business model construction for start-ups in nascent markets, and it is more appropriate to use this approach to collect materials. As the research question in this work is an exploratory one, the first round of interviews was loosely structured as a guided investigation to obtain some key information and was designed as semi-structured focused questions to obtain more in-depth first-hand information. Investigating the business model formation of startups in nascent markets requires considerable problem awareness on the part of the researcher, by which is meant a high degree of sensitivity to the subject of investigation.

As mentioned above, in order to study whether the business models constructed by the start-ups are objective, scientific and representative of the start-ups in the nascent market, the author conducted an extensive search and study of the information of these six case companies. These case studies are mainly obtained from the following sources: 1. information on the Internet; 2.

journals and thesis in relevant literature databases; 3. annual reports and internal publications of enterprises; and the official account, official weibo account and official websites. By organizing, summarizing and analyzing the data of these six case companies, the original data of the six case companies were finally formed. In order to have a straigtforward overview of the six companies, the researcher has briefly described the basic information of the six companies in the table.

3.3.2 On-site interviews

In this thesis, the researchers validated each other by including complementary information provided by different types of respondents to the same event. The interviewees were recommended by the chairman or founder of the case company, and we interviewed the following people: product managers and R&D marketing personnel who participated in and experienced the startup project, founders or top managers, so that the author could triangulate the data corresponding to the information identified in the dossier

Interviewees. In a retrospective study of business model construction for start-ups in nascent markets, the researcher tried to interview all members of the entrepreneurial team and veteran employees who had experienced early onset growth. Because they usually have the most comprehensive knowledge about the development history of new enterprises, these interviewees have participated deeply in the start-up process, have a better understanding of the situation at that time, and have a in-depth understanding of the enterprise, and are suitable subjects for data collection.；Since the business model construction of a start-up is the core change in the development process, these interviewees are mostly at the top of the company, and only the top managers can understand the path of the business model construction of a start-up in detail. Moreover, the interviewees of this study include also the founders or shareholders of each sample company, senior managers or outsiders who were involved in the early process of business model construction. If needed, the authors conducted additional research with external parties familiar with the early history of the start-up or with stakeholders with the aim of corroborating or confirming some of the entrepreneur's views. Interviews were generally conducted in the conference room of the interviewee's company. For company executives or outsiders, the author focused on specific scenarios of company-stage decisions during the genesis of the start-up business and the reasons for continuing to move forward with the new venture. For Sposter's development managers, product managers and other interviewees, the focus is more on the specific process of new business development. During the follow-up

interviews, it was found that there was a large number of repetitive statements between the interview transcripts and the interview transcripts of the previous stages, and based on the principle of adequate and valid data, this thesis judged that the data information was sufficient and stopped the data collection.

Design of the interview prior to implementing the interviews, the researcher designed a draft for the case study and the interviews centered on the entrepreneur's activities in terms of business model and its adjustment measures. This study referred to the interview strategy adopted in the classic qualitative study by Uzzi , while abandoning the existing theoretical framework without any leanings and following the open-ended question research method proposed by Ambos and Birkinshaw . In order to ensure the truthfulness and accuracy of the interview, the researcher promised the interviewees that any information obtained would be kept confidential for academic purposes only, and the acceptance and support from the interviewees would be sought to the greatest extent. In order to obtain as much detailed information as possible; to ensure the richness of the information, the researcher adopted a heuristic style of inquiry like “Is there any other opinions on this?”. In addition, the author focused on the underlying causes, consequences and interconnections of decisions and actions. For example, questions like “what are the connections among those activities” and “what made you choose this plan rather than the other?” would be arisen. All questions were kept as open as possible to capture and obtain some of the key information identified by the interviewee. On the one hand, it also helped the researcher to obtain some unexpected information, thus providing new inspiration for the study. On the other hand, the use of more open-ended questions can help improve the accuracy of the information , and usually, follow-up interviews are adjusted based on lessons learned from previous interviews, thus continuously improving the quality of the interviews. The researcher first conducted a one-and-a-half-hour interview with Chen Yanming, the vice chairman of Sposter, discussing the business model innovation in an open-ended manner. At the end of the interview, the author converted the audio recording into text and analyzed it to determine the outline (see appendix 1) of the interview in relation to the topic of this thesis. According this outline, the researcher interviewed each of the six companies and guided the interviewees appropriately for some questions like “How did the current business model emerge and what difficulties did you encounter during the process?”. After the first round of interviews with the six companies, the authors thoroughly read through all the data and identified the unexplored data against the interview outline, and then conducted multiple interviews with the six case companies, so as to reconstruct the history of the evolution of the business models of the start-ups from multiple perspectives. There might also be

significant contradictions in narratives between interviewees regarding the formation of a specific business model for start-ups, allowing the author to learn from the role of different cognitive concepts of entrepreneurship in the construction of business models. An important benefit of our study design is that these interviewers can reveal motivational factors and details of decision making that archival data cannot provide. The primary data source used for this study was semi-structured interviews that averaged about 60 minutes per person, followed by more than six months of integrating the interview data with the archive-based data. For each start-up, the researcher conducted an average of 2 interviews during 2018-2020, with a cumulative total of 18 semi-structured interviews from 2018 to 2020. For those respondents who agreed to be recorded, the interview was audio-recorded by the investigator and transcribed within 24 hours. Except for interviews, the research material was supplemented by relevant company reports and annual historical summaries. Then the author analyzed the decision-making process, context, implementation and outcomes of each stage during the process of business model for start-ups and assess their impact on the business. The information of time and participants can be seen in table 3.3.

Table 3.3 Time and participants

Sample Firms	Locations	Interviewees	Time
Intelligence Control Technology	Conference Room, No.1 Tianhe Road, Hi-Tech Zone, Chengdu	Mr. Hu, the founder	2019.05.06 1 hour for the first time 2019.05.07 1 hour for the second time
ddd. online	Conference Room, Room 1203, G5 Tianfu Software Park, Hi-Tech Zone, Chengdu Starbucks, No. 299, North Ronghua Road, Chengdu	Jinchun Liao (the founder), Mr. Guo (senior manager) and Mr. Yu (Cooperative partner)	2020.03.09 1.5 hours for the first time 2020.03.10 1 hour for the second time 2020.04.20 1.5 hours for the third time
Sposter	Room 202, No. 42, Shuxi Road, Hi-Tech Industrial Park, Jinniu District, Chengdu	Yanming Chen (Vice President) and the management team (chairman, general manager,product manager, business development)	2018.07.06 1.5 hours for the first 2018.07.07 1 hour for the second time 2018.07.10 1 hours for the third time 2018.07.11 half an hour for the fourth time 2018.07.12 1 hour for the fifth time 2018.07.131 hour for the sixth time
Me +	Conference Room, Room 1203, G5 Tianfu Software Park, Hi-Tech Zone, Chengdu	Mr. Wang, the founder	2018.12.06 1 hour for the first time 2018.12.10 1 hour for the second time

MEPAI	Conference Room, Room 306, Zone B, Tianfu Software Park, Hi-Tech Zone, Chengdu Café, Floor 1, Boshe, TaiKoo Li, Chengdu	Mr. Wang (the founder) and Mr. Tang (Vice president), Mr. Chai (the competitor of Visual China Group)	2020.05.08 1 hour for the first time 2020.05.09 1.5 hours for the second time 2020.05.15 1 hour for the third time
Sanside	Conference Room, Room A5302, Tianfu Software Park, Hi-Tech Zone, Chengdu	Mr. Zhang, the founder	2019.08.12 1 hour for the first time 2019.08.13 1.5 hours for the second time

3.4 Case analysis

Firstly, an initial understanding of the company was gained through the secondary documents. Then, the researcher compiled a history of the company's growth based on a chronological list of the main strategies or activities undertaken by the company in the process of constructing its business model, according to company documents, external secondary sources and interviews. This growth history was confirmed and corroborated by the interviewees and used as the basis for the later analysis. Next, the author used the case study approach (and adopted open coding, selective coding, and axial coding, and then repeatedly compared the presented concepts with the source material to finally generalize the theory. For the data analysis, the author adopted an analytical inductive approach . To be specific, the researcher conducted an open coding of the growth history of the six cases based on the key concepts involved in each dimension of the business model. This includes concepts related to market opportunities, business, market positioning, customers, value. On the business process side, emphasis is placed on concepts related to crucial activities, value chain, core processes, process matching. In terms of profitability, concepts such as revenue, cost, investment, pricing or payment methods are emphasized. By identifying the ephemeral changes in business model-related activities or strategies of start-ups, the author proposed theoretical hypotheses to describe and explain the business model construction process of start-ups. After successive comparisons of the derived theoretical views with the case material, the main views and propositions of this thesis were finally developed.

In the process of data analysis, the researcher organized the in-house documents, company history, secondary materials, key strategies or actions, interview materials, data analysis memos, observation records, open coding, and other materials of the visited case companies into categories, and established a case database, thus ensuring the validity and reliability of the study.

3.5 Validity and reliability

The qualitative research in this thesis adopts research method of the multi-cases analysis. The final step of the multi-cases analysis approach is to test the theoretical saturation of the entire research process, and the study in this thesis is a strict adherence to the requirements related to the selection of case materials and the entire coding process in the multi-cases analysis research approach.

For assurance of credibility: all our codes are quoted statements from the original sources.

Validity: The team completes the coding and iteratively compares, identifies, discusses, and verifies it.

For theoretical saturation, the author generalized concepts, repeatedly compared, discriminated, and discussed them until no new concepts were needed for further interviews. In this thesis, the authors used interview data from six sample companies as a theory saturation test. And when compared with the originally derived categories, it was found that they all belonged to the original categories and no new correlation was derived.

3.6 Conclusion

This study followed the theoretical sampling principles of case studies (and was developed by selecting typical cases, including six companies from five different types of nascent markets: virtual marketplace, digital services, e-commerce, artificial intelligence, distributed enterprise software, and network hardware.

The interviewees were recommended by the chairman or founder of the case company, and the researcher conducted in-depth interviews with the following relevant people: shareholders, executives, or product managers and R&D and marketing personnel who participated and experienced the start-up project. This allowed for triangulation of the data corresponding to the information identified in the profile.

Chapter 4: Analysis Process Based on Multiple Cases Studies

The researcher refined the rich primary data obtained during the study by using the most authentic original words of the respondents in order to keep the initial concepts real and natural.

4.1 Open coding

Open coding is the process of examining and decomposing data, identifying, conceptualizing and categorizing data, and making correlation and convergence of the collected discrete data. For this reason, this thesis adopted a manual-based approach and combined with software to perform open coding in four steps.

1. Conceptualizing the text. The author organized the transcripts of the original interview data in an open coding framework, reviewed and analyzed all the cases line by line, coded and labeled them, and simultaneously extracted the original material data to form a conceptualized text for all items.

2. Forming an initial pool of concept alternatives. The researcher combined business model-related ideas and characteristics to consolidate data points, and the conceptualized text containing data points was reviewed word by word, identified, summarized and filtered to form the initial concepts for alternative.

3. Identifying the initial concept. Again, based on the concept and characteristics of the business model, the researcher collected information from all the respondents and came up with a total of 403 labels like lack of resources, entrepreneurial risk. In the process of extracting and summarizing the information reflected by the tags, we removed tags with less than 3 frequencies The alternative initial concepts with less than 3 occurrences of information points were discussed repeatedly with the mentor to decide whether to stay or go. Then the alternative initial concepts and the conceptualization process were reviewed sentence by sentence and word by word based on the three principles of relevance, accuracy and typicality, and the insignificant and repetitive initial concepts were removed. In the end, 36 initial concepts were approved by the consistency review.

4. Formation of initial categories based on initial concepts. The 36 initial concepts formed by the initial coding were derived from the original case material and had a certain level of abstraction, but the relationships between the concepts were not clear. Moreover, in this stage it is necessary to establish a crosstalk between the research topic and the data to start the

theoretical integration. Therefore, this thesis further focused on coding, based on the 36 initial concepts eventually summarized 12 initial categories (number CX), to achieve connecting concepts and categories together, so that the initial concepts based on categories more closely approximated the research target.

To ensure the reliability of the study, the researcher coded independently and wrote a coding memo. The coded text materials and coding memos were then communicated with the mentor to measure the degree of consistency in coding, and lastly, the final open coding was reviewed by the mentoring team.

The open code is shown in Table 4.1 below. As Mr. Li from Sposter said, "We discussed what opportunities this event has for us, and then Mr. Pu said "why don't we go to the community to see the results and found the opportunity in the community."; Intelligence Control Technology said "Young mothers after 85 often work and raise children at the same time, and are too tired to press the switch"; Mr. Cheng from ddd.online said "There is no shortage of 3D development tools in the visual industry, just a shortage of tools to produce 3D content at low cost"; Mr. Wang from Me + said "Offline physical merchants are connected and will form a platform for crosstown merchant operations"; Mr. Wang from MEPAI said "Nowadays, companies need to attract traffic through mini-games on official accounts and sign-in for offline activities"； Mr. Zhang from Sanside said "Now due to the safety regulations implemented by Ministry of Housing and Urban-Rual Development of the PRC, construction site workers must be consistent with the certification of documents". The original information described by the six founders, defining the phenomenon, the researcher can then generalize the initial concept. See Appendix II for the specific open coding process. The results of the coding of initial concepts and initial categories are shown in Table 4.2.

Table 4.1 The open code

Example of original material	Conceptualized texts	Initial concepts
A1 The boss bought something on Amazon overseas, and felt very convenient to pick up the delivery inside the alley, and came back to think that China should also have such products and models； A2 We found that banks are also interested in the community, such as Bank of China, Construction Bank, Minsheng Bank； A3 Convenient and intelligent delivery lockers will be very popular in China in the future； A4 Why don't we go to the community to see the results and found the opportunity in the community. A5 Young mothers after 85 are often both working and raising children, and 19: 00-21: 00 is the most exhausted period after work, indeed, it is "too tired to press the switch", so there is a	A1 Discover delivery lockers abroad ； A2 Banks pay attention to delivery lockers ； A3 the trends of delivery lockers in China ； A4 Discover opportunities in community research ； A5 Smart home demands; A6 3D display needs for e-commerce ； A7 real	B1 Identify pain point and turn it into business opportunities (A1,A2,A3,A4,A5,A6,A7,A8,A9)

greater demand for smart home products. A6 There is no shortage of 3D development tools in the visual industry, just the lack of a low-cost tool to produce 3D content, and all products of e-commerce will be displayed in 3D； A7 Taobao is connecting virtual merchants, we are connecting offline physical merchants to form a platform for crosstown merchant operations；A8 Nowadays, companies need to attract traffic through mini-games on offical accounts and sign-in for offline activities； A9 Now due to the safety regulations implemented by Ministry of Housing and Urban-Rual Development of the PRC, construction site workers must be consistent with the certification of documents.	store go online A8 Pan-internet diversion needs； A9 Intelligent site management needs

The researcher labeled the primary sources, coded them, proposed concepts, and then generalized the categories according to the multi-cases analysis research method. The above steps for the six case companies eventually yielded 36 initial concepts, coded with the initial categories, as shown in Table 4.2.

Table 4.2 Case enterprise: initial concepts and initial categories

Initial concepts	Initial categories
B1 Identify pain point and turn it into business opportunities (A1,A2,A3,A4,A5,A6,A7,A8,A9) B2 Identify blind spots in the market (A10, A11, A12, A13,A14,A15,A16,A17,A18) B3 Identify business entry points (A20, A21, A22, A23,A24,A25,A26,A27,A28,A29)	C1 Opportunity recognition capability (B1, B2, B3)
B4 Resource Integration (A30, A31, A32,A33,A34,A35,A36,A37,A38,A39,A40,41) B5 Resource combination and focus of efforts on opportunities (A42, A43,A44,A45,A46,A47,A48,A49,A50,A51)	C2 Opportunity Exploitation Capability (B4, B5)
B6 Clarify the primary and secondary relationships (A52, A53, A54,A55,A56,A57,A58,A59,A60) B7 Knowledge Convergence (A61, A62,A63,A64,A65,A66,A67) B8 Business experience accumulation (A68, A69, A70.A71.A72.A73.A74.A75.A76.A77)	C3 Centralization of knowledge structure (B6, B7, B8)
B9 Increase knowledge association (A78, A79, A80, A81.A82.A83.A84.A85.A86) B10 Expanding the scope of knowledge (A87, A88, A89, A90.A91.A92.A93.A94) B11 Consider multiple options (A95.A96.A97.A98A.A99.A100)	C4 Complexity of knowledge structure (B9, B10, B11)
B12 Change of thinking (A101.A102.A103.A104.A105.A106.A107.A108.A109) B13 Reconsider the program (A110.A111.A112.A113.A114.A115.A116.A117.A118) B14 Focus on entirely new areas (A119.A120.A121.A122.A123.A124.A125)	C5 Shifting the focus of the knowledge structure (B12, B13, B14)
B15 Trial different products or services (A126.A127.A128.A129.A130.A131.A132.A133.A134.A135.A136) B16 Test different customers (A137, A138, A139.A140.A141.A142.A143.A144.A145.A146.A147)	C6 Trial and error learning (B15,B16, B17)

B17 Experiment with different business models (A148.A149.A150.A151.A152.A153.A154.A155.A156.A157.A158. A159.A160)	
B18 Product variations (A161, A162, A163.A164.A165.A166.A167.A168.A169.A170.A171.A172)	
B19 Service Changes (A173.A174.A175.A176.A177.A178.A179.A180.A181)	C7 Strategy Iteration (B18, B19, B20, B21)
B20 Changes of time (A182.A183.A184.A185.A186.A187)	
B21 Changes in competitive strategy (A188.A189.A190.A191.A192)	
B22 Technology Accumulation (A193.A194.A195.A196.A197.A198.A199.A200)	C8 Resource Endowment (B22, B23, B24)
B23 Technology Foundation (A201.A202.A203)	
B24 Technical talents (A204.A205.A206.A207.A208.A209.A210)	
B25 Lack of business experience (A211.A212.A213.A214.A215.A216.A217.A218)	C9 Entrepreneurial resource constraints (B25, B26, B27)
B26 Lack of resources (A219.A220.A221.A223.A224.A225)	
B27 Single source of resources (A226.A227.A228.A229.A230.A231.A232)	
B28 Product positioning (A233.A234.A235.A236.A237.A238.A239)	
B29 Customer Positioning (A240.A241.A242.A243.A244.A245.A246.A247)	C10 Market Positioning (B28, B29, B30)
B30 Competitive positioning (A248.A249.A250.A251.A252)	
B31 Marketing and Sales (A253.A254.A255.A256.A257.A258.A259)	C11 Operation process establishment (B31, B32, B33)
B32 Process System (A260.A261.A262.A263.A264.A265.A266)	
B33 Service Standards (A267.A268.A269.A270.A271.A272.A273.A274.A275)	
B34 User Scale (A276.277.A278.A279)	
B35 Operating income (A280.A281.A282.A283.A284.A285.A286.A287.A288)	C12 Profit model determination (B34, B35, B36)
B36 Competitive Barriers (A289.A290.A291.A292.A293.A294.A295.A296.A297)	

The author extracted the relevant concepts by repeatedly comparing, identifying and summarizing with the original data through the above methods, and then repeatedly refining and summarizing the categories. Twelve initial categories were extracted: opportunity recognition capability, opportunity exploitation capability, knowledge structure centralization, knowledge structure complexity, knowledge structure focus shift, trial and error learning, strategy iteration, resource endowment, entrepreneurial resource constraints, market positioning, operational process establishment, and profit model determination.

4.2 Axial coding

The axial coding is to make the case material centered around the “main axis”, based on the refinement of the main category of the initial category, which is a further categorization. Creswell (1998) pointed out that qualitative research design methods . The “constant comparison approach” that can be used to analyze the data by comparing them with the original

data to find similarities and differences. In this thesis, the researcher selected multiple case studies to seek commonalities, and the initial categories with logical hierarchies and interactions were regrouped and named to obtain 6 main categories. The main categories, initial categories and relationships are shown in Table 4.3. In order to ensure the validity of the coding in this stage, we randomly invited 7 people (2 from Sposter, 1 from Intelligence Control Technology, 1 from DDD.online, 1 from Me +, 1 from MEPAI, and 1 from Sanside) among the interviewees to express their understanding of the 6 main categories, so as to avoid misunderstanding the meaning of the language and description of the events expressed by the interviewees.

Table 4.3 The main categories, initial categories and relationships

The main categories	Initial categories	Relationships
Entrepreneurial Capabilities (C1, C2)	C1 Opportunity recognition capability (B1, B2, B3)	Identify business development opportunities through judgment
	C2 Opportunity Exploitation Capability (B4, B5)	Integrate internal and external resources so that the best combination of resources is invested in the most promising opportunities
Management Cognitive Shift (C3, C4, C5)	C3 Centralization of knowledge structure (B6, B7, B8)	New core concepts are accumulated from the experience of the same business, the concentration of new concepts in the knowledge structure of the enterprise is gradually increasing, and management cognition is in gradual change
	C4 Complexity of knowledge structure (B9, B10, B11)	As we continue to perceive the need to think about new problems and changes in new business creation, the core concepts are enriching and diversifying, leading to more multidimensional and detailed thinking. The cause-and-effect relationship between concepts becomes more complex, and the management perception is also changing gradually.
	C5 Shifting the focus of the knowledge structure (B12, B13, B14)	The core concept of concern (problem focus) has shifted, new solutions have been focused on or old ways of thinking have shifted. A sudden change in management perception has occurred
Strategy experiment (C6, C7)	C6 Trial and error learning (B15, B16, B17)	The large amount of feedback data and information brought by trial and error during the startup process helped new companies better understand the industry and their own characteristics, rapidly accumulated experience and knowledge, and corrected startup actions.
	C7 Strategy Iteration (B18, B19, B20, B21)	The company conducts trial and error iterations of the internal and external environment, with rapid changes and small adjustments in the process, and a continuous feedback process to improve the fit with the environment until a more profitable business model is found and the start-up is sustainable.
Resources base (C8, C9)		

Business Model (C10, C11, C12)	C8 Resource Endowment (B22, B23, B24)	Establishing the initial relationship resources, associated resources, technology base, technical talent and preparation capital for start-ups
	C9 Entrepreneurial resource constraints (B25, B26, B27)	Lack of directly applicable resources and experience in exploring new market opportunities
	C12 Market Positioning (B28, B29, B30)	Arrangements to give the product a clear, special and desirable position in the mind of the target customer in relation to competing products
	C13 Establishment of operation process (B31, B32, B33)	The planning, organization, implementation and control of operational processes are management tasks that are closely related to the manufacture of products and the establishment of services.
	C14 Profit model determination (B34, B35, B36)	Identify and manage the value of business elements and find profit opportunities in them

4.3 Selective coding

The authors continued to analyze and compare the categories of the case companies in the open coding stage. The inductive story line helped to sort out the relationship between the main categories and inductively derived the core categories, which led to the theory. Through a selective coding of the main category relationships, the core category was further refined to "business model construction for start-ups in nascent markets" based on "entrepreneurial capabilities", "management cognitive shift", "strategic trails", "resource base", and "business model", with reference to the paradigm model. The core scope of selective coding is specified in the figure 4.1.

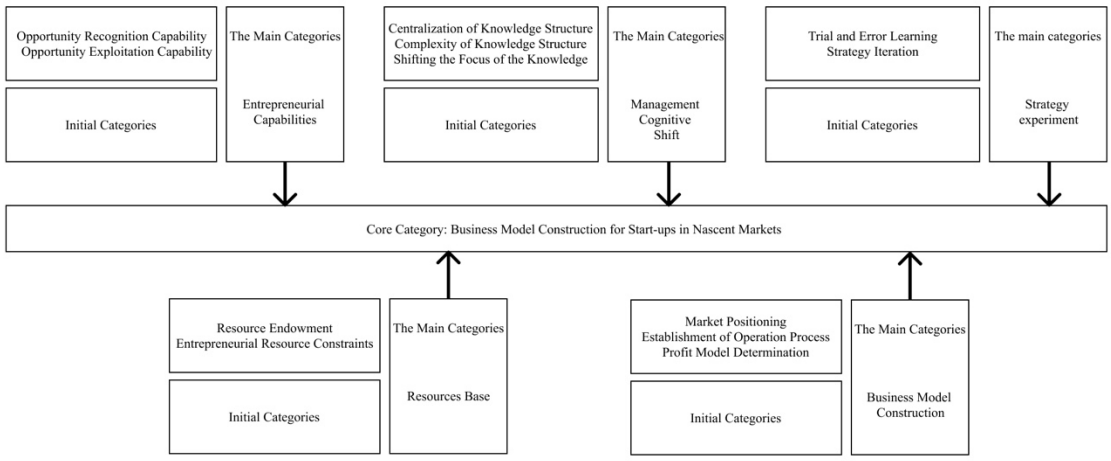

Figure 4.1 The core scope of selective coding

In order to test the validity of the study, the preliminary conclusions drawn were shared with colleagues who were unfamiliar with the subject of this study to receive their feedback.

At the same time, the author shared with scholars familiar with the topic of this study in the form of a report to receive their opinions. In addition, a coding analysis based on secondary data was conducted to verify the theoretical saturation. All results indicated that no new concepts and categories emerged from the coding analysis under the research theme, and it was determined that the analysis had reached theoretical saturation.

4.4 Comparative analysis of multiple cases

Multi-cases analysis can dig into the essence of the phenomenon, from selective coding, spindle coding, comparative analysis of main and core categories and comparative analysis of open coding and setting categories. The story line around the core category: "Business model construction of a start-up in a nascent market" is as follows: in the context of a "management cognitive shift" (causal condition), the company's "management cognitive shift" drives "strategic experimentation" (action) to achieve "market positioning", "operational process", and "profit model" (outcome) in sequence. Management cognitive shift, resource base, and entrepreneurial capability together moderated the impact of strategic experimentation, with management cognitive shift being the main cause. The six target cases were organized and summarized into 12 key focuses such as the capacity to identify opportunities, and finally the core category was built, and the connection structure between key points was tabulated, as shown in Figure 4.2.

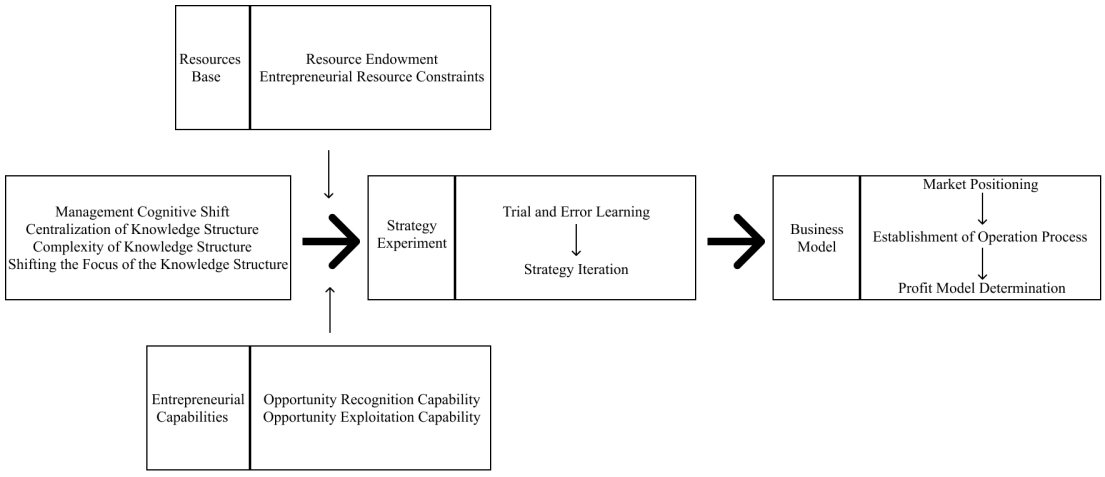

Figure 4.2 Paradigm model for core category "business model construction for start-ups in nascent markets"

The author collated and summarized into several elements through six target cases: opportunity recognition capability, opportunity exploitation capability, centralization of knowledge structure, complexity of knowledge structure, shifting the focus of the knowledge,

trial and error learning, strategy experiment, market positioning and other factors. The relationship between these dimensions indicated that building the business model is essentially a process of interaction between managerial cognitive changes and external strategic experiments, and the business model built by different managerial cognition is different. Any change in management perception of a start-up in a nascent market triggered a change in business model constructs.

Differed with the strategic schools of thought, the researcher has developed a case study based on the framework of integration and convergence of strategic experimentation in the perspective of entrepreneurial process to explore the interaction and evolution mechanism of management cognitive elements, strategic experimentation and business model construction of start-ups. For example, in the case of ddd. online, the management team believed that the marginal cost of SaaS software licensing sales tends to zero and was the best business model, and further adjusted the expected business model structure. The authors of this thesis took a qualitative approach such as multi-cases analysis to explore in depth the underlying principles of how, when, and why startup entrepreneurs designed their business models.

4.5 Conclusion

Unlike previous studies on business models, this study examined the conceptualization of business models of start-ups and their processes from the perspective of the entrepreneurial process. Due to the lack of empirical evidence on this issue, this study followed the multi-cases research method to conduct semi-structured interviews with managers of six companies. The interview data were then processed using open coding, axial coding, and selective coding, and 12 initial categories were extracted through selective coding of main category relationships, drawing on the paradigm model: opportunity recognition capability, opportunity exploitation capability, centralization of knowledge structure, complexity of knowledge structure, shifting the focus of the knowledge, trial and error learning, strategy iteration, resource endowment, entrepreneurial resource constraints, market positioning, operation process establishment, and profit model determination. Then, the initial categories were furthered into six main categories-entrepreneurial capabilities, management cognitive shift, strategy experiment, resources base, and business model. Finally, the core category was built as “Business model construction for start-ups in nascent markets”.

Chapter 5: Findings

The mechanism of business model building for start-ups in nascent markets. The shift in management perception is a series of activities to build a business model led by the approach of strategic experimentation. Business model building mechanism for start-ups in nascent markets: strategic experimentation influenced business model construction. The elements of business model construction for start-ups in nascent markets were presented in a simplified manner. The business model consisted of "market positioning", "operational process establishment", and "profit model determination". The process of "management cognitive shift" driving "strategic experimentation" was moderated by "entrepreneurial capability" and "resource base".

5.1 The mechanism of business model building for start-ups in nascent markets: the shift in management perception is a series of activities to build a business model led by the approach of strategic experimentation

According to the multi-cases analysis, the process of business model construction for start-ups under the time-separation model from the perspective of management cognitive shift, this research found that in the process of business model, management cognitive transformation is characterized by three aspects: centralization of knowledge structure, complexity of knowledge structure and shift of the focus of the knowledge; different characteristics of management cognitive shift states drove the use of different strategic experiments (trial-and-error learning or strategic iteration); the management cognitive shift ultimately determined the type of business model constructs by influencing strategic experimentation, which in turn governed its sequence of business model activity transitions.

Take the transitional phase of ddd.online as an example. Multi-cases analysis specified the mechanism of action revealed by the staged transformation of the business model of the start-up. As seen in Table 5.1, the three aspects of the management cognitive shift in the process of constructing the business model of ddd.online were characterized by different changes at different stages, and their different change characteristics drove the actions of different strategic experiments of the start-ups. Specifically, change in management cognition was only one aspect of the change in the complexity of the knowledge structure, which only further enriched the concepts related to the "3D application development business", thus making the strategic

experimentation aimed at improving the quality of technical services to meet the 3D needs of customers, i.e. the company used the logic of "trial and error learning"; in the "strategy iteration", not only the concentration of knowledge structure began to show changes, but also the complexity of the knowledge structure continued and increased, and new core concepts began to gradually gather in the collection of concepts related to the business of entrepreneurship, and the center of gravity shifted. Launching 3D community needs to aggregate traffic, and establishing operation service system" could solve the problem of customer acquisition so it was clear that the strategy experiment was a continuous learning process. The change in management perception was the strongest during the "strategy iteration" until a more profitable business model was found, which was manifested in the centralization of the knowledge structure, the complexity and the shift in concentration, particularly, the focus of cognition changed from "3D creative community" to a new solution of "tool plus community plus material service platform". Thus, strategic experimentation affecting start-ups inclined to use a gradual and controlled approach to explore new and profitable future opportunities and related knowledge, such as service market approaches, customer issues and market. It could be seen that the management cognitive shift ultimately dominated the business model categories and the series of business model phase activities in the business model construction process of ddd.online by influencing the dimensions of different strategic experiments as table 5.1.

Table 5.1 Business model construction

		Trial and error learning	Strategy Iteration	Strategy Iteration
The states of managing cognitive transition	Structual complexity	Manifestation: Increased core concepts evidence: the emergence of core concepts like “Possibilities of 3D applications” “3D function development”	Continuing to show: evidence: core concepts such as “3D community”, “3D material library”, and “3D tools”	Continuing to show and strengthen: evidence: abundant concepts and increasingly complex inter-concept relationships, and more complex knowledge structures “How to improve customer experience” “How to get more customer traffic”
	entralization of structure	Not shown: evidence: The new core concept was still focused on "3D application development "	Continuing to show: evidence: Clearly focused on "3D community", " aggregate traffic", " invent a 3D creative community"	Continuing to show and strengthen: evidence: The core concept further focused to: "3D tools"," 3D community”, “3D service" the whole chain of services, to obtain the maximum profit
	Focus shifting	Not shown: evidence: The understanding of the	Manifestation: evidence: The focus of the	Manifestation:

	problem was still limited to: "3D technical service capability"	enterprise changed from "3D technology service" to "3D creative community", and the way of thinking has changed fundamentally.	evidence: The core concept still focused on "tool plus community plus material service platform"
Strategy experiment	Trial and error learning: evidence: "3D technology services ensured to meet Alibaba's needs"	Strategy Iteration: evidence: Continuously launched new product business "Launch 3D community to get more customer base"	Strategy Iteration: evidence: Continuing to launch new product business " tools plus community plus material library platform model"

The above points in this thesis were valuable in understanding where, why, and when start-ups made the adjustments. This thesis presented the following proposition:

Proposition 1: Management cognitive shifts ultimately determined the business model outcomes by influencing strategic experimentation, and the different dimensions of management cognitive shifts influenced the activities of different strategic experiments of the firm, which ultimately shaped the firm's business model constructs.

In summary, the core model of business model construction process and mechanism is shown in Figure 5.1.

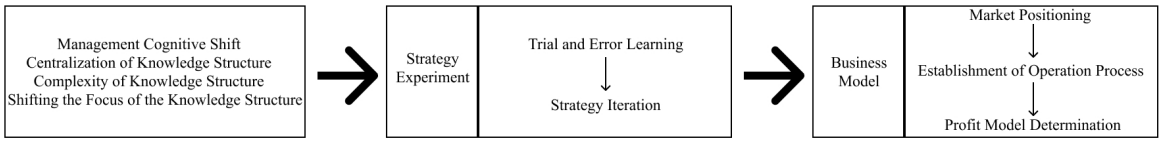

Figure 5.1 The core model of business model construction process and mechanism

5.2 Business model building mechanism for start-ups in nascent markets: strategic experimentation influenced business model construction

These multi-cases analysis discovery revealed the mechanism of the role of strategic experimentation on business model construction in start-ups. The business model construction of a start-up was never a destructive innovation. The business model construction process of the case company, Intelligence Control Technology, featured an obvious dynamic evolution, exploring the rapid trial and error of the internal and external environment of the start-up.

At the beginning of the establishment of Intelligence Control Technology, the business model needed to be created from scratch and the main task of the management team was to put the business blueprint idea into practice. In other words, the team provided "self-developed smart home software and hardware products", but "the promotion market is not effective", "high uncertainty of demand", and "it is difficult to ensure the company's income", and the uncertainty of profit model was high. In the case of "performance not meeting expectations", the company "can't make ends meet", the management team began to no longer stick to the initial business ideas, but "brainstorming to solve the company's difficulties", to collect new development ideas. After the initial product launch failure, "the management team kept reflecting", "found a sector", "provided technical services", "provided custom development services for the Industrial Internet of Things", "fed the company", "the company survived", "gradually the company had revenue. At the same time, the firm achieved growth in the number of customers and revenue by gradually "expanding the number of customers", and the uncertainty of "market positioning" and "profit model" was greatly reduced. However, the sustainability and growth of the "profit model" lacked perfection, and the "operation process establishment" also needed to be improved. The "unstable business of customized projects", "high labor costs", the sustainability of customized projects, and the limited ability to serve the customized projects were all factors that limited the sustainability of the company, and it was difficult to have a sustainable "profit model" guarantee. So, under a series of "strategic experiments", "product trial and error", "user experience improvement", "product structure and function adjustment", the management team started to capture the real needs of customers. The company developed the corresponding functional modules with demand, and created standardized industrial IoT software and hardware products with customer focus, and in order to achieve China-wide sales, the entire software products were clouded, and the hardware was sold online through Amazon or Alibaba platform. At the same time, the platform of industrial IOT software products was realized, and the standard of software service was gradually clarified; the business model of software and hardware sales was rapidly replicated, and the business model of Intelligence Control Technology was finally established. To sum up: the business model building process of the case company Intelligence Control Technology could be summarized in the table 5.2.

Table 5.2 The business model building process of the case company intelligence control technology

The business model building process		Specific activities under the three dimensions of the business model
Trial and error learning	Market Positioning	Initially positioned as a smart home service provider
	Establishment of operation process	Promoted smart home software and hardware, and sales offline looked for customers to sell
	Profit model determination	Relied mainly on smart home software and hardware sales for profits
Phase transition: management team's exploration of new operational ideas triggered by poor sales performance		
Strategy Iteration	Market Positioning	The company was positioned in the IoT industrial enterprises and industrial manufacturing enterprises, first to meet their product digitalization needs with customized technology services, extracted customer needs, and fed the software and hardware functional iteration
	Establishment of operation process	Sold customized services to expand the number of customers
	Profit model determination	Profited mainly from customized services and technology development outsourcing
Phase transition: Management team's perception of business model viability drove the search for business model sustainability		
Phase of determination	Market Positioning	The company was positioned in the IoT industrial enterprises and industrial manufacturing enterprises. Management team achieved business model replication through standardized software and hardware product demands
	Establishment of operation process	Software cloud-based, hardware online sales, online customer acquisition
	Profit model determination	Online sales of hardware and software for profit

The case of Intelligence Control Technology revealed that start-ups first practice their business model vision by entering nascent markets with their initial resource endowment. However, trial-and-error learning exhibited high uncertainty in profit models and market positioning, and start-ups usually suffered from a variety of internal and external uncertainties in the early stages of their foundation. In this case, the "market positioning" of the initial business model was "fewer people are willing to buy smart homes and the market is not competitive enough". In connection with this, the "market positioning" was subsequently adjusted to "provide customized development services to industrial companies. The profit model was determined to be that "purely customized development services lead to less sustainable revenues". To ensure sustainable revenue, the management team began to make important adjustments to the business model in terms of market positioning, profit model and other dimensions. In this case, the management team got "new business ideas" in a customized service industrial design company. The company began to "focus on those industrial IoT

enterprises, industrial manufacturing enterprises", and put emphasis on " business on customized services", "refining the real needs of customers", "feeding into the standardized hardware and software product development work", and finally the uncertainty of various dimensions of the business model began to be reduced. As start-ups fulfilled their ongoing business model goals in the established positioning direction, their business models began to enter the establishment phase and gradually achieved a replicable business model. In the present case, it was manifested in the management team's refinement of the original business model elements, software platformization, standardization of hardware functions, online sales and service system, and optimization of the business process to bring the business model to a replicable level so as to meet the needs of the startup's sustainable survival and development.

When the researcher projected the strategies or actions taken by the case companies in the iterative process of business model in trial and error onto the three dimensions of business model, it was found that although the above six companies belonged to different industries and their business models themselves were very different, the process of building business models of the six companies was surprisingly similar. The summary of those similarities can be seen in the table 5.3.

Table 5.3 Strategies or actions taken in the business model process

Business models for start-ups		Intelligence Control Technology	ddd.online	Sposter	Me +	MEPAI	Sanside
Trial and error learning	Market Positioning	Targeted the initial market with specific products Evidence: smart home technology service provider to home customers	Targeted the initial market with specific services Evidence: provided 3D creative content production services, provided 3D function development services	Targeted the initial market with specific services Evidence: Invested in the bank return counter business	Targeted the initial market with specific products Evidence: I was doing a virtual mall at the time of forming a warehouse	Targeted the initial market with specific products Evidence: After countless nights of working overtime, Wang Qiang had the official account of MEPAI.	Targeted the initial market with specific products Evidence: one-click enterprise platform for generating H5 games
	Establishment of operati	Simple business process	Simple business process	Simple business process	Simple business process	Simple business process	Simple business process

	on process	Evidence: marketing, offline sales	Evidence: handled Alibaba sales with management team	Evidence: involve din return counter business	Evidence: treated a city as a mall	Evidence: utilized self-publishing and third-party news aggregation platforms to do content distribution of photography industry updates and original content.	Evidence: Self-developed 'HuHu Game' platform, through the visualization module.
	Profit model	High uncertainty of survival Evidence: No customers to pay for software and hardware, marketing difficulties	High uncertainty of survival Evidence: highly relied on Alibaba	High uncertainty of survival Evidence: single bank return counter business, banking tended to be electronic	High uncertainty of survival Evidence: The efficiency of the heterogeneous alliance was so low that people had to take the offline contract.	High uncertainty of survival Evidence: investment was limited.	High uncertainty of survival Evidence: difficulty in obtaining orders and inability to consistently serve customers
Strategy Iteration	Market Positioning	Gradually clear market positioning Evidence: customized to provide personalized services to industrial IoT companies	Gradually clear market positioning Evidence: launched 3D community, and aggregated customer traffic	Gradually clear market positioning Evidence: grid of self-help convenience service	Gradually clear market positioning Evidence: began to explore the way out and began to open community fresh food stores	Gradually clear market positioning Evidence: It's time to restart the Me+ community.	Gradually clear market positioning Evidence: decided to transform into the mobile Internet field in 2015, and mainly engaged in Internet business and its derivatives.

	Establishment of operation process	Core processes gradually formed Evidence: extracted customer requirements to feed the functional development of hardware and software products	Core processes gradually formed Evidence: converted customer traffic online through communities to drive other customer groups with Alibaba head customers	Core processes gradually formed Evidence: Tried to initiate cosmetic customization business	Core processes gradually formed Evidence: The model of the grocery store was the same as the Hema Xiansheng Supermarket, both of which adopted the organic and high-quality fresh food approach.	Core processes gradually formed Evidence: defined as a professional original picture community, the new version increased the rating, reward, daily chart, weekly chart, monthly chart and other columns	Core processes gradually formed Evidence: In the initial transformation, a lot of capital needed to be invested in research and development
	Profit model determination	Costs stabilized and survival uncertainty declined Evidence: Gained revenue from customized services and rapidly iterated software development	Costs stabilized and survival uncertainty declined Evidence: Expanded customer service base	Costs stabilized Ecidence: Made intelligent supporting devices around the community	Costs stabilized Evidence: The acceptance of the residents was high and the traffic increased dramatically at once	Costs stabilized Evidence: New users provided high quality material to the community	Focused on technology development Evidence: At that time, the cost of R&D personnel was high, and there was no output for a long time.
Determination phase	Market Positioning	Clear market positioning Evidence: 4G connected module services for industrial IoT;	Clear market positioning Evidence: creative design advertising agency, New media industry, Media	Clear market positioning Evidence: intelligent express container operation platform, 24-hour self-	Clear market positioning Evidence: rapidly reached merchants in combination with mobile payments	Clear market positioning Evidence: Maximizing the value of the photographer's work would be	Clear market positioning Evidence: Began to focus more systematically on technology development, especially in the construction

	platformi ng of software	advertising clients	service collection counter		the business model MEPAI strived for	of smart cities, such as smart sites, smart campuses and other areas of security and emergency
Establi shment of operati on process	Each process was coordinat ed properly. Evidence: Online Amazon sales of software and hardware; cloud licensing and usage	Each process was coordinated properly. Evidence: Tools + community + service model full chain service customers	Each process was coordinat ed properly. Evidence: Developm ent of new locks to solve the load-bearing problems; continuou s improvem ent and upgrading of products	Each process was coordinated properly. Evidence: Developme nt of ERP-based SaaS mall operation system	Each process was coordinate d properly. Evidence: The disseminat ion of new media content expanded the influence of MEPAI, bringing new users to the communit y download naturally, and new users provided quality material to the communit y	Each process was coordinated properly. Evidence: It has developed a campus big data platform for several campuses in Chengdu, and cooperated with the Housing and Urban-Rural Developmen t Bureau to build a smart site big data platform.
Profit model determi nation	Significan t improvem ent in the quality and scale of revenue Evidence: Many customers purchased IoT 4G communi	Significant improveme nt in the quality and scale of revenue Evidence: Community brought traffic for customer acquisition, selling standardize	Significan t improvem ent in the quality and scale of revenue Evidence: Hundreds of thousands of express lockers	Significant improveme nt in the quality and scale of revenue Evidence: In 2017, serving over 20,000 merchants with an annualized transaction	Significan t improvem ent in the quality and scale of revenue Evidence: MEPAI' s user base has grown from 4 people at the	Significant improvement in the quality and scale of revenue Evidence: 100 million in revenue expected in 2021

cation modules and software licenses in large quantities	d tools, increasing value by providing services; maximizing profits	were invested; the largest communit y coverage	scale of $3 billion	beginning to more than 30 people, with a total fan base of nearly 2 million, and the total number of new media read on each platform has been several hundred million

The business model building process of the six companies shared similar characteristics.

Business model "learning by trial and error" was a gradual exploration process after a new company entered the market for the first time. The management team wanted to turn what they initially identified as a business opportunity into profit, trying to build the basic business model structure of the company around that business opportunity and forming the prototype of the business model. For example, Intelligence Control Technology believed that selling smart home software and hardware fitted right into the advocacy of smart home at that time; the innovative technical services offered by ddd.online were a good market opportunity, although it lacked a clear idea when it first entered the market; therefore, ddd.online hoped to search for profitable business opportunities by taking the large profit space due to the asymmetry of customer information as the entry point; Sposter believed that there was a demand for self-service convenience grids in the community, such as convenient medicine cabinets, so they tried their best to provide products that met their technical requirements and to modify the return cabinet.

However, start-ups at this hypothetical stage suffered from high survival pressure and uncertainty due to their recent entry into the nascent market, mainly in the form as follows: the operational process is highly dependent on the initial endowment of the management team, assumptions of market positioning might not be practical, and start-ups might not find a profit opportunity, or might have a single one. The success of startups depended heavily on the success of specific projects, and the risk of failure was high. Therefore, start-ups in "trial and

error learning" tended to adopt various activities or strategies to reduce the uncertainty of the embryonic business model in all dimensions in order to reduce the uncertainty of survival. For instance, Intelligence Control Technology seeked to promote smart home software and hardware; ddd.online expanded its business with the orders provided by Alibaba; Sposter invested all its efforts to solve the technical problems of bank return equipment.

Business model "strategic iteration" was an explorative process for start-ups to make important adjustments to their business model dimensions, with adjustments to multiple dimensions or to a single dimension triggering adaptations and interactions between the different dimensions. For example, In the process of serving the smart home, Intelligence Control Technology gradually set its target market at customers with industrial equipment and communication interconnection scenarios, thus, its profit model of charging for products and services was able to take hold. During the "strategic iteration" of a business model, start-ups adopted various strategies to reduce the uncertainty of certain dimensions of the business model. For instance, Intelligence Control Technology strived to improve its service processes to ensure customized services to the satisfaction of its customers; on the other hand, start-ups might also take advantage of the uncertainty of certain dimensions of the business model and thus realigned their market positioning. For example, ddd.online decided to devote itself to the development of the tool software business with higher uncertainty, and made a series of exploration on the specific development direction of the software (Starting from 3D model analysis, to online community, to the construction of 3D material library, and finally to the proposal of the whole chain of tools + community + material + service").

The multi-cases analysis showed that new companies usually gradually clarified the direction of development and modified their entrepreneurial behavior during the "trial and error learning" process of business model exploration. For example, all six case companies defined their role or position in the process of "strategic iteration" of their business model: Intelligence Control Technology focused on IoT communication terminal equipment and service providers, while ddd.online re-positioned itself as a "3D design creative community", Sposter positioned itself as a "self-service convenience grid and platform project" during the business model of trial-and-error learning. This clarification of roles or positioning provided specific direction for the development of start-ups. After acquiring a large amount of feedback data and information in a large number of trial-and-error activities and rapidly accumulating entrepreneurial experience and knowledge, start-ups began to exploit and explore business opportunities, and to improve operational stability through regularization and institutionalization (Morris et al., 2005), reducing uncertainty in the three dimensions of the business model, and achieving a

sustainable and stable state. For instance, Intelligence Control Technology started to focus on improving IoT communication module products, service standards, and management standards to ensure the quality of products and services; ddd.online established a standardized software development process, launched its own molding technology products and community, and received recognition from key customers Alibaba and JD.com; Sposter clarified the improvement and enhancement of the delivery locker products and strengthened the degree of integration. These rule-based and process-oriented efforts resulted in a significant reduction of uncertainty in all dimensions of the business model of the start-up, which was gradually established.

In summary, according to the multi-cases analysis, the business model of start-ups was a gradual and dynamic process, unlike the existing structure of business models adjusted by mature companies, the business model evolved from nothing to something, a multi-stage trial-and-error learning process, but never a destructive innovation. In the process of business model "trial and error learning", the main task of start-up companies was to practice trial and error and test the initial business model idea, through various adjustments and trial efforts, in order to achieve the reduction of uncertainty in all dimensions of the business model. For example, when building the initial smart home software and hardware, Intelligence Control Technology first approached the large enterprise Xiaomi Group for cooperation, but was not successful and the management team soon turned to small customers with low visibility; ddd.online initially overcame technical difficulties on Ali, and soon the management team adjusted its strategy to implement parallel projects within the customer's enterprise and the company to win customer satisfaction. Obviously, the adjustment of the business model "learning by trial and error" was a tactical adjustment in the way the initial business concept was implemented, in order to reduce the uncertainty of the survival of the start-up; during the "strategic iteration" of a business model, start-ups adjusted to uncertainty in all dimensions of the business model, often including strategic adjustments to business concepts and cognitive shifts in management. For instance, only after the frustration of promoting software and hardware in the smart home industry did Intelligence Control Technology gradually realize the important value of providing customized development services from the light of industry services, thus clarifying the development direction of the company. One of the distinctive features of "strategic iteration" of a business model was that the management team would consciously reduce the uncertainty of certain dimensions of the business model, thus increasing the probability of survival. The company also took advantage of uncertainty in certain dimensions in order to proactively adjust its market positioning. After the "strategic trial and error" of the business model, start-ups focused on the

regularization of the business model (by setting up process systems and rules to promote the practice of the business model in the established business direction. For example, Intelligence Control Technology introduced a customer delivery system to improve the business process; ddd.online clearly implemented the standard process of software development; Sposter strengthened the system related to quality and product improvement. These alignment measures effectively reduced uncertainty in all dimensions of the business model, ultimately enabling effective growth of start-ups.

Notably, this case also found that the initial survival and performance crisis was a key factor that led the Intelligence Control Technology enterprise to make important adjustments to its business model, while the management team's management perception of the viability of the business model was an important driver that led it to enter into strategic trials. These findings were not given much attention in existing studies, which usually assume that the business model adjustment process results from the solution of certain tasks and that the conversion seems to occur naturally . Therefore, based on the identification of the dynamic evolutionary process of business model building, the factors driving strategic experimentation and their driving mechanisms are also further explored by the author in this study through multi-cases analysis, which led to the next proposition

Proposition 2: Mechanisms of business model construction for start-ups in nascent markets: Strategic experimentation influenced business model construction

In summary, this study meticulously outlined that start-up influenced business model constructs through strategic experimentation, and that strategic experimentation significantly and positively affected the concept of business model constructs as shown in the figure 5.2.

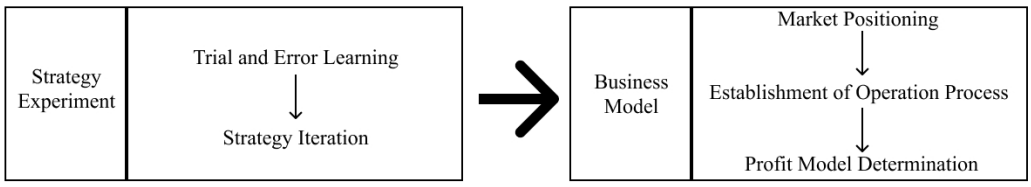

Figure 5.2 Conceptual model of strategic experimentation impacting business model constructs

5.3 The elements of business model construction for start-ups in nascent markets were presented in a simplified manner: the business model consisted of "market positioning", "operational process establishment", and "profit model determination".

Based on the multi-cases analysis of the text, it was found that the business model building activities of the six case companies showed a sequence of actions of market positioning, operation process and profit model. The following example in Figure 5.3 was used to analyze the elements of simplification in the evolution of MEPAI business model based on the construction from zero to one, and to specify the logical process of the finding.

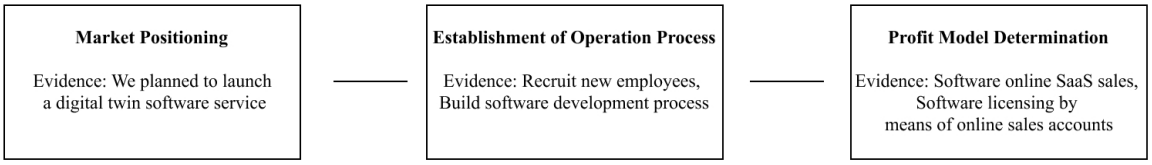

Figure 5.3 A Simplified model of the process of business model construction for start-ups in nascent markets

First of all, as it could be seen in the process of building a business model from zero to one (see Figure 5.3), new enterprises tended to be small and simple, and their business model building activities showed a simplification of elements. A brief conceptual model of the business model, refined from case data, included three dimensions: market positioning, operational process and profit model, and there were relationships among the dimensions that influenced each other.

At the beginning of the venture, the management team had a very simple idea, that is, they wanted to provide a WeChat official account to do distribution of consultation and original content of the photography industry, and strived to earn income from publication fees. As seen in Figure 5.3, when MEPAI "launched its WeChat official account" and "served photography users", it presented a typical "market positioning", triggering a series of "content editing teams." People who found interesting and hot photography topics would provide information sources to the editors, and after the editors wrote out the stories, others were responsible for distributing the content to news aggregators such as Daily Express, Jinri Toutiao and UC News. “Operating process” achieved a corporate "profit model" by sharing pictures. However, after the management team online promoted the App version 1.0 of the individual product for a period of time, they found that the operational process did not function effectively. Several problems emerge red later as follows: the bug from MEPAI came out frequently; the user experience was

not favorable; the product could not be rapidly iterated. What's worse, the technical team could not solve these problems, and the funds invested were a drop in the bucket. The operation of MEPAI was once at a standstill. In order to survive, the management team began to seek new ideas. The management team believed that it has "temporarily stopped the MEPAI website, which already reached 50,000 fans, and dived into operating New Media for MEPAI". Moreover, the management team agreed that the company needed first to survive to further increase the possibility of growth. From Figure 5.3, the author conceptualized the "company's operational difficulties" and "product inability" as the "operational process", and this process encountered bottlenecks, leading to "the team's strengths quickly emerge when they are fully engaged in new media operations", forming a new "market position". Thus, "market positioning" and "operational activities" were intrinsically related, and "marketing activities" became an important link between "market positioning" and "profit model". After a period of trial and error, "the management team had a lengthy meeting to visualize many new features for the community, defined as a professional original image community, and the new version added columns for rating, rewarding, daily chart, weekly chart, and monthly chart. Wang Qiang has always thought that the 1.0 version of MEPAI online is too "rough", and the 2.0 version that had just been rebuilt online was only the 1.0 version he had in mind. "Compared with new media, communities are more stable and difficult to enter an explosive growth, but they are a benign cycle." With the efforts of the management team, "the dissemination of new media content expanded the influence of MEPAI, bringing new users to the community download naturally, and new users provided quality material to the community".

"MEPAI gathered groups of professional photographers and photography enthusiasts, I am always thinking about what young people need, but also always thinking about how to deliver benefits to the users of the community and help them to grow, so we not only opened the MEPAI public class, but also launched the MEPAI book". "Operational activities" have significantly led to a change in management perception. So on September 20, 2017, the 3.0 version of MEPAI was launched. In the process, "I found 100 photography experts in the community and made a hundred photographer portrait posters." MEPAI' s user base has grown from 4 people at the beginning to more than 30 people, with a total fan base of nearly 2 million, and the total number of new media read on each platform has been several hundred million, re-establishing "market positioning".

As the company's business was increasingly clear, "after the MEPAI content ecosystem is established, the copyright value of a large number of high-quality images on the platform gradually emerges, finding additional sources of income for photographers and maximizing the

value of their work will be the business model that MEPAI strives for.” In the process of a series of strategic experiments, the management team gradually found a replicable, efficient development into a photography industry new media matrix, community operations, offline combination of photography ecosystem, with a total fan base of nearly 2 million and an annual readership of hundreds of millions. MEPAI entered the fast track of development. The construction of the business model of MEPAI started with the repeated determination of the "market positioning", through a series of "operation process" activities, and finally "operation process" activities enabled the realization of the business opportunity, thus building the business model of "new media matrix, community operation, and offline combined photography ecosystem". Obviously, the "operational process" is also a key bridge to integrate MEPAI's "market positioning" and "profit model".

In summary, this thesis put forward the following proposition.

Proposition 3: The elements of business model construction for start-ups in nascent markets presented simplification: "market positioning", "operational process", and "profit model".

5.4 The process of "management cognitive shift" driving "strategic experimentation" was moderated by "entrepreneurial capability" and "resource base"

This thesis, based on multi-cases analysis, revealed the process by which the shift from management cognition drives strategic experimentation. In the process of dynamic evolution of business model construction of start-ups, strategic experimentation was constantly changing and continuing, and it promoted the complexity of the knowledge structure, the centralization of the knowledge structure, and the shift of the focus of the knowledge structure to build entrepreneurial capabilities and effectively integrated internal and external resource capabilities.

From the evolution of poster's business model construction process, it was observed that the process was based on iterating the prototype of the "bank return counter" product, developing "supporting smart devices" around the community, and "selectively putting the return counter into operation in specific communities" with small-scale trial-and-error learning and continuous strategic iteration. This process was a low-cost exploration. The chance of failure and cost for “returning to the counter product “were relatively low. Not only wouldn't it be a devastating blow to the management team, but also the product iteration opportunity of "returning to the counter product" and "community counter launch operation" gained through

trial and error as a learning outcome might have a positive effect in future actions and accumulated a lot of entrepreneurial knowledge, thus building new entrepreneurial capabilities. Through strategic experiments, Sposter continuously acquired the necessary entrepreneurial knowledge from the external environment based on feedback from various parties involved in the "change of return counter to self-service express collection counter". Through these new methods and technologies, the company built up new entrepreneurial capabilities by developing new locks to solve the technical load-bearing problems of the return cabinet upgrade, and by conducting "product improvements and enhancements" based on predictability problems. Specifically, in the process of exploring the business model of the "Self-service Convenience Network and Platform Project", Sposter needed to interact with the highly uncertain external environment through a series of management cognitive changes, purposefully absorbing and searching for a large amount of new knowledge from outside the company, “recruiting new employees", "trying to initiate cosmetic customization business". Meanwhile, during this process, the knowledge presented structured concentration or transformation, "developing new locks", "solving the problem of load-bearing for the return counter transformation", acquiring new technologies, new methods to transform the return counter into a community smart counter. On the other hand, the trial-and-error learning phase of strategic experimentation provided start-ups with a large number of failures, which prompted the new management team to reflect on and explore existing knowledge and resources, change management perceptions, generate new ideas and new technologies, build new entrepreneurial capabilities, and evolve towards profitable business models (“Intelligent express box cabinets are placed to cover tens of thousands of communities", "Sposter”), as well as deepen and refine the existing knowledge and resource base capabilities. At the same time, Sposter effectively integrated external and internal resource base in business model building activities, such as through the existing "return counter product technology", "return counter technology modification", "recruitment of new employees", "investment in convenient community smart counter", “the capacity of improvement on product technology ". On the one hand, the company accumulated the necessary knowledge to identify new opportunities by interacting with markets, customers, external talents, and exterior companies through "strategic experimentation". On the other side of the "strategic experimentation" process, Sposter experimented with business models by reorganizing different resources. The process of consolidating the resource base resulted in the acquisition of key resources related to staff capacity (hiring new employees), funding (“Sposter financing event"), technology ("investment in convenient community network cabinets"), marketing ("selective placement of smart cabinets in specific communities"), and internal and

external resources ("formation and transformation of management perception "). These entrepreneurial knowledge and management cognitive changes guided Sposter to effectively integrate "resources on hand" with external resources to build the ability to create value for customers, i.e., the ability to leverage opportunities, so that the best combination of resources could be invested in the most promising opportunities. As can be seen, all of these researches supported our multi-cases analysis findings on the mechanisms of business model construction for start-ups in nascent markets.

In summary, the analysis led to the following proposition.

Proposition 4: The process of "management cognitive shift" driving "strategic experimentation" was moderated by "entrepreneurial capabilities" and "resource base".

In conclusion, a conceptual model of the moderating role of entrepreneurial capabilities, resource base in the process of managing cognitive and strategic experimentation was drawn as shown in Figure 5.4 below.

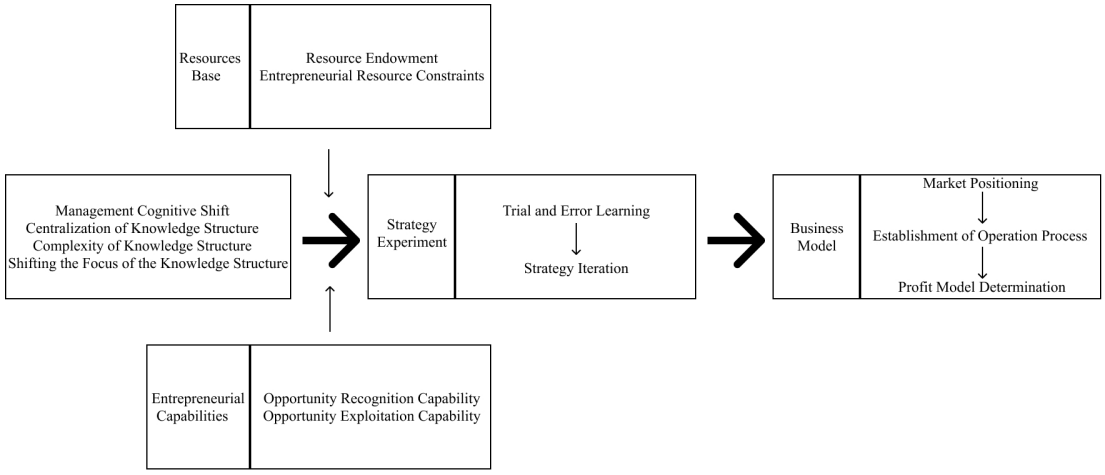

Figure 5.4 The process of "management cognitive shift" driving "strategic experimentation" was moderated by "entrepreneurial capabilities" and "resource base"

5.5 Conclusion

Unlike previous studies on business models, this study examined the conceptualization of business models of start-ups and their processes from the perspective of the entrepreneurial process. Due to the lack of a corresponding empirical basis for the study of this issue, this study followed a normative multi-cases analysis research method to conduct semi-structured interviews with managers of six firms. Then a rich set of field data was collected, and the interview-related data were processed using open coding, spindle coding, and selective coding methods to explore the sequence of business model construction activities, the influence of

strategic experimentation on business model construction, the simplifying elements of the business model, and the moderating role of the "management cognitive shift" in driving the "strategic experimentation" process. The results of the study suggested that management cognitive shifts influenced the business model outcome through strategic experimentation, and that different dimensions of management cognitive shifts shaped the activities of different strategic experiments of start-ups, which finally determined the business model construction. On this basis, strategic experiments (trial-and-error learning, strategic iteration) were used to solve various problems faced in the business model construction process and to develop management cognition within the company.

In summary, the concept of business model building for start-ups presented in this thesis exhibited the following features: firstly, it was a reflection of the simplification of the elements of business model construction for start-ups; secondly, in order to promote the business model of start-ups, it was necessary to start with the management perception of the executive team; thirdly, the business model of a start-up was a gradual and dynamic evolution, and unlike the adjustment of the existing structure of the business model of a mature company, the business model was a multi-stage trial-and-error process from nothing to something, never a destructive innovation. In the trial-and-error phase, start-ups performed the main task of practicing trial-and-error and tested the initial business model assumptions through various efforts of adjustment and experimentation in order to achieve the reduction of uncertainty in all dimensions of the business model. The process of developing the concept of business model constructs for start-ups reflected the cultural background of Chinese enterprises and the actual connotation and implicit characteristics of business model constructs, which to a certain extent promoted the development of business model theory and laid the conceptual foundation for subsequent research.

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Chapter 6: Conclusions

Through the previous five chapters, this study has provided a systematic and in-depth analysis of the process and mechanism of business model construction for start-ups under China's economic transformation. This chapter will summarize the full study and presents the main conclusions, theoretical contributions, and management implications of the study. Also, this chapter will discuss the limitations of this study and suggestions for future studies.

6.1 Research findings

This study presents an understanding of the process and mechanism of business model construction, including the process of construction dynamics and the main mechanisms, through a case study of six start-ups in the nascent market. There are four major findings:

1. The concept of managerial cognitive shift is proposed, and the different dimensions of managerial cognitive shift influence the activities of different strategic experiments of the company, which finally determine the business model construct of the start-up company by influencing the strategic experimentation and ultimately the business model outcome;

2. The theoretical model of strategic experimentation is proposed, and the business model construction process of start-ups in nascent markets: from the initial business model conception to the implementation of strategic experimentation, start-ups undergo a cyclical, evolving process of trial-and-error learning and strategic iteration, which ultimately affects the construction of business models; 3. The elements of the business model construction for start-ups in nascent markets are defined as simplified: "market positioning", "operational activities", and "profit model"; 4. The process of "strategic experimentation" driven by "management cognitive shift" is moderated by "entrepreneurial capability" and "resource base". This study provides a model of general applicability and enriches the current theoretical understanding of business model construction for start-ups in nascent markets.

6.2 Relationship between research findings and theoretical foundations

Proposition 1: Management cognitive shifts ultimately determined the business model outcomes by influencing strategic experimentation, and the different dimensions of

management cognitive shifts influenced the activities of different strategic experiments of the firm, which ultimately shaped the firm's business model constructs.

Existing research suggests that firms with high managerial cognitive complexity are more adaptive in their strategies , and the greater the diversity of core concepts in management cognition, the more sensitive strategic decision makers can be in capturing, identifying, and understanding changes in the environment . It can be seen that the above conclusions are consistent with the relationship between management cognitive shift and business model stage evolutionary transition found in this study. In addition, existing studies, under the agreement that management cognition is a set of knowledge structures applied by decision makers in making strategic decisions, generally portray the overall cognitive characteristics of decision makers (and their cognitive shifts (in terms of two dimensions of centralization and complexity of knowledge structures. This study includes an additional dimension of focus shift, based on which we can more carefully establish the mechanism of the change of focus of management cognition on the integration process of trial-and-error learning and strategy iteration, as well as the micro-process of management cognition shift, which clearly presents the mechanism behind the sequential process of business model phase transition. Moreover, strategic experimentation links plans to behaviors, and this study echoes Andries P scholars of start-ups actively gaining feedback from their environment to build and adjust their business models through multiple business model experiments in an uncertain environment . And it echoes the suggestion of Zahra S A scholars that when the external environment changes beyond the firm's control, start-ups need to develop new ways of survival through experimentation to cope with rapidly changing needs . Therefore, the survival of start-ups relies more on their ability to adjust to information input and rapid feedback from the environment, and means-directed theory also states that in highly uncertain situations, new firms need to experiment differently in the marketplace before finding a viable business model . In addition, these studies also support this research about the existence of trial-and-error learning and strategic iterative transformation use in business model construction mechanisms, and strategic experimentation as an important way to form business models for start-ups. This study finds that factors such as management cognitive change in the perception of business model viability play an important role in proactively driving the construction of business models for start-ups, thus responding to the lack of research on proactive change mechanisms proposed by Gersick .

In summary, this study is valuable in understanding the mechanism, the reasons and the timing of business adjustments by start-ups.

Proposition 2: Mechanisms of business model construction for start-ups in nascent markets: Strategic experimentation influenced business model construction.

To reduce environmental uncertainty start-ups, conduct rapid trial and error and strategic iteration in internal and external environments. The business model dimensions change rapidly and with minor adjustments during this process to improve compatibility with the environment. Moreover, trial-and-error learning and strategy iteration is a continuous feedback process until a more profitable business model is found to enable the start-up to operate sustainably. The core of this process is rapid strategic iteration through rapid trial and error, and its resources are invested in an incremental manner. The large amount of feedback data and information brought by trial-and-error learning, as proposed by Andries et al., helps new firms better understand the industry and their own characteristics, rapidly accumulate experience and knowledge, modify entrepreneurial behavior, and reduce uncertainty and entrepreneurial risk, indirectly backing up the findings of this study . This thesis also echoed what Nicholls-Nixon et al. have said that due to the lack of knowledge about themselves and the external environment, start-ups must use trial and error and experimentation to find ways to create value based on what they can afford to lose and the resources they have at their disposal (Nicholls-Nixon et al., 2000; Woo et al., 1994). From an entrepreneurial perspective, due to the complexity of the structure and the high level of uncertainty in the environment (Sosna et al., 2010), this study confirms that the innovation of a new firm's business model is an innovation process that includes multiple stages of trial-and-error learning and is never disruptive (Chesbrough, 2010). Trial-and-error learning in the strategic experimentation process proposed by Guo and Cai motivates new firms to interact closely with various stakeholders, explore and try out various business models at low cost, and obtain a lot of feedback and knowledge, which helps new firms to explore the internal and external environment, actively develop and exploit kind of entrepreneurial opportunities, and realize new value models. The studies of the aforementioned scholars all support the findings of this thesis (Guo & Cai, 2014).

It is worth noting that the initial survival and performance crisis was also found in this case to be a key factor that led the Intelligence Control Technology enterprise to make important adjustments to its business model, while the management team's management perception of the viability of the business model was an important driver that led it to enter into a strategic experiment. These findings have not received much attention in existing studies, which usually consider that the process of business model adaptation results from the solution of certain tasks and that the transition seems to occur naturally .In view of this, on the basis of identifying the dynamic evolutionary process of business model construction, the factors driving strategic

experimentation and their contributing mechanisms are also further explored by the authors of this study through multi-cases analysis above.

Proposition 3: The elements of business model construction for start-ups in nascent markets presented simplification: "market positioning", "operational process", and "profit model".

This study reveals the process of market positioning, operational process, and profit model presentation for start-ups in nascent markets, as they gradually shift to the business model establishment stage in the process of implementing their designated market positioning. The new companies have started to focus on the exploitation of given business opportunities by increasing the stability of their operations through rules and institutionalization , reducing the uncertainty in the dimensions of "market positioning", "operational process establishment", and "profit model determination" of the business model, and increasing the certainty to make it sustainable. For example, MEPAI began to focus on improving the product, "and technical director Dayu Xu discussed the feasibility of development one by one.After endless working, in February of the following year, MEPAI version 2.0 was officially launched"; ddd.online has established a standardized software development process, launched its own molded products, and received recognition from valued customers; on the basis of its own technical advantages, the company Sposter was attempting to launch an intelligent express box operation platform to strengthen quality and related systems or standards, and enhance integration to eventually form the “Sposter" product. These operational processes result in a significant reduction of uncertainty in all dimensions of the business model of the new business start-up and the gradual establishment of the new business model. Y. Wang, and W. Han have also refined a modest conceptual model of business models from the analysis of literature studies .Y. Wang, and W. Han point out that new enterprises usually start out as micro enterprises, and the operation is usually simple, so the use of simplified theoretical tools can better present the process of constructing their business models, also supporting the findings of this thesis. This study also complements and expands on their research gaps by structuring the business model concept in detail and proposing a clear theory of the business model construction process for start-ups. Meanwhile, Morris is the best known and most influential in the study of business models for start-ups or new ventures. The author proposes a six-factor theory of business models for new ventures based on literature research, which presents an integrative concept, thus sorting out in more detail the key elements that new start-ups should consider when building their business models (Morris et al., 2005). The author believes that business models are designed to illustrate how a company can position and integrate a set of interrelated variables in terms of corporate strategy, operational structure and economic logic in order to build a sustainable competitive

advantage in a given market. Based on this concept, the business model includes three levels of logic, namely: strategic logic, operational logic, and economic logic. The strategic logic includes market initiatives, organizational behavior, growth opportunities, competitive advantage and sustainability. The business model is described as "a general examination of the strategic direction of different companies". The operational logic focuses on the basic structures and internal processes through which the enterprise creates value, describing the business model as the "operational structure of the enterprise". The essence of economic logic is the logic of profitability, which describes a business model as "the economic model or profitability model of a company". Thus, the three aspectes further indirectly supports the finding of this study about the key elements and interconnections of business model constructs.

Proposition 4: The process of "management cognitive shift" driving "strategic experimentation" was moderated by "entrepreneurial capabilities" and "resource base"

The case analysis shows that, especially in the specific context of China's digital economy transformation, the formation of nascent markets often relies on the joint decisions of entrepreneurs and other stakeholders such as customers, partners, and investors. Instead of acquiring sufficient knowledge to identify and exploit viable business opportunities before entering a nascent market, start-ups need to enhance their "entrepreneurial capabilities" ("opportunity identification" and "opportunity exploitation") in strategic experimental practices to break through the resource constraints of the enterprise or to efficiently utilize and organize their resource base to create profitable business models. Scholars such as Andries support the multi-cases analysis findings of this study: strategic experimentation involves a purposeful trial-and-error process that redefines and reassesses opportunities based on new knowledge gained from the process of exploring new profitable opportunities . If the feedback from the interaction between the business model and the market indicates that the results of the experiment are negative, a new experiment will lead to a redefinition of the initial business model of the new enterprise. It also confirms the study of Zahra S A that strategic experimentation promotes the active interaction of start-ups with internal and external parties to enhance the ability to identify opportunities by exploring new and more profitable business models in the market, and that start-ups need to interact with external stakeholders on a continuous basis to gain the necessary knowledge to identify new opportunities . During strategic iterative experimentation, new companies acquire knowledge related to identifying new opportunities such as service market approaches, customer issues, and markets in a progressive and controlled manner . On the other hand, strategic experimentation facilitates the effective integration of resources to create value from opportunities, and the knowledge gained

in the process of resource integration is the basis for building the capacity to exploit opportunities. Nicholls-Nixon et al. pointed out that the essence of entrepreneurial behavior is the integration of resources in a value-creating way, and that strategic experimentation contributes to how start-ups discover the proper combination of resources (Nicholls-Nixon et al., 2000). Business models are mechanisms of opportunity exploitation , which reduce the loss of resources by adjusting different combinations of resources for business model experimentation. This is supported by the finding of this study as well. Especially in the context of China's transition to a digital economy, rapidly changing technologies, customer needs, and market competitors require start-ups to enhance their entrepreneurial capabilities through strategic experimentation, reduce resource consumption, and iterate on profitable business models in order to survive.

As can be seen, all of these studies support the multi-cases analysis findings on the mechanisms of business model construction for start-ups in nascent markets.

6.3 Theoretical contributions

Expansion of strategic pilot studies

This thesis explores the process and mechanism of business model construction of start-ups from strategic experimentation in the context of China's transition to a digital economy, which helps to explain the formation of business models of start-ups from a dynamic process perspective and promote the contextualization of the theoretical concept of strategic experimentation. This thesis reveals that an important means of forming effective business models for start-ups is strategic experimentation, and that the construction of entrepreneurial capabilities is the core of the formation of a new enterprise business model constructing competitive advantage. The feedback mechanism provided by strategic experimentation has led start-ups to develop not only the ability to exploit existing opportunities, but also to build opportunity recognition capabilities that help to perceive and search for new ideas; and building entrepreneurial capabilities is the key for new firms to gain sustained competitive advantage in the context of a transition economy. Based on strategic experiments, this thesis also provides a new perspective to explore the sources of competitive advantage for new start-ups in the context of China's transition economy. Nichols-Nixon et al. (2000) stated that strategic experiments help to explain why some start-ups are more likely to win in a high uncertainty environment than others, which has implications for the analysis of sources of competitive advantage for new firms and entrepreneurial practices in dynamic environments . Strategic experimentation

provides a dynamic process perspective on the process of building business models for start-ups in China's transforming digital economy, where intense market-based competition and frequent economic and political changes create a high level of uncertainty and make it difficult for start-ups to rely solely on a static resource base to gain sustainable competitive advantage. From the existing studies, strategic experimentation as a theoretical construct to explain strategic change in start-ups was proposed by Nichols-nixon et al. (2000), but few studies have applied it to the business model construction activities of start-ups, and there is a lack of empirical evidence on the relationship between strategic experimentation and business model construction of start-ups in the context of China's transforming digital economy. This reason is that the business objectives of mature firms are relatively stable, transitioning from one steady state to another (Gersick, 1994), and the changes in each strategic dimension are low in frequency and magnitude, and conducting strategic experiments are only reorganization and adjustment on the basis of existing strategies and are not applicable to start-ups, while for start-ups strategic experiments are not a reorganization or adjustment of existing business models, but a process of constructing business models from scratch, including a series of rapid trial-and-error and strategic iterations aimed at exploring the internal and external environment of start-ups to improve the fit with the environment while reducing environmental uncertainty. This study is a useful attempt to explore and expand the introduction of strategy experimentation into the study of new start-ups. This thesis validates the positive effect of strategy experimentation on the business model construction of new startups in the context of China's transforming digital economy, which will encourage more scholars to consider strategy experimentation as a key explanatory variable for the success of new startups in the context of China's transforming digital economy and to explore the related power variables.

Developments in research on cognitive shifts in management:

Based on the process of the action sequence of business model construction through the influence of management cognitive shift on strategic experimentation to reveal the construction mechanism of business model construction activities, the path of management cognitive shift affecting business model construction is revealed, which provides a reference for in-depth analysis of the mechanism of the action of management cognitive shift. At the same time, the analysis in this thesis found that, in terms of knowledge structure change, management cognitive shift gradually shifted from a single dimensional change of knowledge structure complexity to a multidimensional change of knowledge structure complexity, centralization and focus shift, which not only confirms the judgment of Shang Hangbiao et al. on the hysteresis of management cognitive change . Moreover, this thesis also found that although a

complete shift in management perception (change in all dimensions) takes longer, management perception is accompanied by a focus on information. and depth of information. The gradual increase in the depth and breadth of information changes the knowledge structure, which gradually transforms cognition and dominates the business model building activities of start-ups by influencing strategic experimentation. Thus, the analysis of this thesis also reveals the microstructure change process of "management cognition transformation" in the context of business model construction of start-ups, which enriches the research content related to management cognition transformation.

Expansion of the study of business models

Based on the analysis of the business model construction process and mechanism of start-ups in nascent markets, this thesis corroborates Y. Wang and Han proposal that start-ups are usually small enterprises with simple business content, and the process of their business model formation is better presented using a parsimonious theoretical tool . George and Bock also proposed an opportunity-centered view of business models based on survey data from 151 entrepreneurs, deconstructing business models into three dimensions such as resource structure, transaction structure, and value structure from an entrepreneurial perspective . However, this thesis uses multi-cases analysis to analyze start-ups in nascent markets based on strategic experimentation activities examined under different dimensions. Integrating multiple dimensions of business model constructs is valuable for observing start-ups building business models. It provides a constructive perspective that emphasizes different observed dimensions and their integration effects, from nothing to rapid trial and error, and continuous iteration to build profitable business models. Thus, it is an important theoretical tool to observe the business model process of start-ups. Because of the importance of business models for start-ups, how to seek and construct a viable business model has become a new idea in the study of start-ups in nascent markets. Although noted by Mullins et al. and corroborated by this thesis, the growth of a start-up is a process of continuous matching of the elements of its business model, a process of constant validation of business assumptions, and the initially planned business model will continue to learn and adjust during the implementation process, and what may eventually be realized is another business model (Mullins et al., 2009),. Therefore, maintaining flexibility is crucial to the growth of start-ups. However, these studies have not carefully deconstructed the business model concept of start-ups, nor have they proposed a clear process theory of the business model construction of start-ups in nascent markets. Thus, the analysis in this thesis also reveals the microstructural change process of business model construction of start-ups in nascent markets and enriches the research on business models of start-ups.

6.4 Practical implications

1: Business model building for start-ups can be achieved by changing the knowledge structure and accelerating the cognitive shift of executives, thus advancing the process of strategic testing and integration of market positioning, operational processes, and profit models. Specifically, actively promoting executives' thinking in core conceptual focus, depth, breadth, and relevance in strategic entrepreneurial activities helps facilitate the revision of the executive knowledge structure in terms of complexity, concentration, and shift of focus, thereby accelerating the transformation of strategic entrepreneurial thinking and strategic experimentation, and driving the conversion of business model concept ideas to business model building actions.

2: Start-ups facing resource constraints need to focus their business model building activities on market positioning and operational process activities to catalyze the transformation of market positioning to profit model. For resource-constrained start-ups, while they can draw on established business resources when starting up, if they simply copy business logic and reuse resources, they may fall into a strategic bottleneck and find it difficult to move into the process of exploring more profitable business models. Accordingly, resource-constrained start-ups should focus on improving and strategically experimenting with limited resources to maximize the use of resources to address the uncertainties during the exploration of market opportunities

3: Start-ups can learn to position themselves and make strategic choices through low-cost, small-scale trial-and-error learning. In order to better realize the transition from strategic experimentation to business model building activities for start-ups, on the basis of acquiring a large amount of internal and external knowledge and experience through strategic experimentation, the executive team of start-ups should take the initiative to carry out trial-and-error learning and strategic iteration process in order to accumulate knowledge and identify entrepreneurial opportunities and enhance entrepreneurial capabilities, so as to overcome the disadvantages of start-ups and carry out business model building.

6.5 Limitation

This thesis addresses how Chinese start-ups construct business models in nascent markets in the context of China's digital economic transformation. The author analyzes the mechanisms of business model construction for start-ups in nascent markets from a multi-cases analysis, as an important exploration, hoping to expand existing research on business model theory, but there are still some limitations.

First, although the six cases selected in this study all conform to the principles of representativeness and typicality of this theoretical sampling, and the similarities and differences among these six cases are also considered to test the applicability boundary of the constructed theory, the findings of the study are mainly applicable to technology SMEs in the context of China's digital economy transformation. This study lacks an examination of other equilibrium models and corporate objects in the study sample to provide a detailed description of the sample and reveal the generalizable scope of the findings, which still need to be verified in a larger sample and in more contexts.

Second, this thesis presents a preliminary theoretical conceptual model, but the business directions of start-ups are very diverse and still need more in-depth research. For example, Ambos and Birkinshaw (2010) discuss the impact of strategic choice, claiming that the difference in strategic choice is the main difference between incumbent firms and start-ups in nascent markets. Busenitz & Barney have pointed out that an important difference between start-ups and established firms is the choice of strategic direction, and that new firms may operate in a great variety of directions due to the lack of a clear resource or market position .

Third, although the author received the help from tutors and classmates, the coding process was done independently and may show subjectivity. All six companies are technology-based start-ups in the context of China's digital economy transformation, with the limitations of their type. All six companies are technology-based start-ups in the context of China's digital economy transformation, with the limitations of their type. Therefore, the findings of this study do not provide a broad generalization, but only a limited one. Therefore, it is appropriate to apply the findings of the study to China's local emerging technology Internet companies, but caution is needed when applying them to Chinese e-commerce companies. The competition for technology startups in China's nascent market is fierce, and there is a scarcity of information that allows for ongoing research because of the rapidly changing technology iterations and the ever-changing market. These factors at the same time posed some difficulties for the authors of this research.

6.6 Suggestions for future studies

1. In the context of China's transformation into a digital economy, facing rapid technological change and fierce market-based competition, start-ups need both to capitalize on opportunities as they arise and to quickly anticipate market and technology trends to identify new opportunities . Obviously, the transformation of China's economic system provides a natural

laboratory for testing entrepreneurial capabilities. This can be explored in depth and empirically tested in the future by conducting research on the dynamic realization process of entrepreneurial opportunity identification in nascent markets.

2. Based on the fact that it is difficult to reflect the uniqueness of industries for start-up SMEs in the context of China's transforming digital economy, future research can select specific industries in order to analyze the mechanism of the role of strategic experimentation on the business models of start-ups.

3. The empirical research on strategy experiments for start-ups in nascent markets is still in the exploratory stage. It has been more than ten years since the theory of effectuation reasoning and strategy experimentation was proposed, but it is still an emerging theory in the field of entrepreneurship and the development and testing of its measurement scales have only emerged in recent years, and the popularity of empirical research is still in need of time . This thesis may have shortcomings in the measurement of strategic experimentations, and future studies can revise the existing scales of strategic tests by incorporating the frequency and magnitude of strategic tests and conducting empirical studies.

4. All the subject companies in this thesis promote their business models by building digital platform, which may result from the fact that platform leadership follows the same logic of real options as strategic entrepreneurship . Thus, platform-based business may become an important practice for strategic entrepreneurship of start-ups in the context of China's transforming digital economy. Future research may consider the analysis of the mechanism of platform value or platform-based business model from the perspective of strategic entrepreneurship.

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Annex A

Research Background

In the specific context of China's economic transformation into a "digital economy", entrepreneurs of start-ups in nascent markets are focusing on business model building in order to adapt to various changes and ensure efficient operation of their businesses. Although theoretical research on business models has achieved certain results, there is still a lack of theories to guide the business model construction of start-ups in the emerging market and a lack of perfect theories on the business model practice of start-ups.

Interview Subjects:

Entrepreneurs or executives of start-ups in nascent markets, leaders of business model innovation activities

The objective of the interview: To distill the general path of successful business model building for start-ups in nascent markets.

Purpose of the interview: To distill the general path to successful business model building for start-ups in nascent markets.

The Problem

1、How did you identify the market opportunity?

2、For this potential demand, has the customer been satisfied before? (Divided into two cases: can meet but can still be optimized, cannot meet)

3、If it can't be met, what kind of business model are you using to meet the current customer demand? Is it a technological innovation, a policy application, or some other way? If you can meet but build a different business model, what kind of nascent market did you create in the existing business model you built and what is different from other companies?

4. What were the obstacles in the startup process and how did you solve them? Can you tell us in detail the process of finding ways to remove the obstacles?

5、Did you encounter any difficulties in the process of implementing the business model? Can you describe in detail how you overcame these difficulties?

6、What are the differences between your business model and other companies? What benefits did this difference bring to you?

Thank you very much for your participation and good luck!

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Annex B

Example of original information	Conceptualized text	Initial Concept
A1 The boss ran abroad to buy something from Amazon, and felt very convenient to pick up the express in the alley, and came back to think that China should also have such a product and model; A2 We found that banks are also concerned about this piece of community, such as Bank of China, Construction Bank, Minsheng Bank; A3 Convenient intelligent express delivery and pick-up cabinet will definitely be popular in China in the future; A4 Discussed what opportunities this event has for us, and then A5 Young mothers after 85 often work and raise children at the same time, and 19: 00-21: 00 is the most exhausting period after work, which is indeed "too tired to press the switch", and therefore there is a greater demand for smart home products. 3D development tools, but the lack of a low-cost production of 3D content tools, all products of e-commerce will be 3D display; A7 Taobao is the virtual business connection, we are the offline entity business connection, the formation of a hometown business operation platform; A8 now the enterprise need to be in the public number through the small game to attract traffic, offline activities also need to sign in; A9 now due to the URA safety regulations, construction site workers must be unified with the human card.	A1 Foreign discovery of express cabinets; A2 Banks focus on express cabinets; A3 Express cabinets China trend; A4 Community research to discover opportunities; A5 Smart home demand; A6 3D display demand of e-commerce; A7 Offline physical stores online; A8 Pan Internet diversion demand; A9 Site intelligent management demand	B1 Identify painful business opportunities (A1,A2,A3,A4,A5,A6,A7,A8,A9)
A10 We have been doing smart devices to see if there is a supporting community. Therefore, we went to the community to visit the field.A11 At that time, we also discussed the goods to put the electronic return counter and how to sell drugs together (self-service drug collection).A12 By chance, we found parcels piling up in the property management room, something that is also used abroad.A13 China's courier volume market is much larger and collects more courier demand;A14 In 2014 when the smart home only started, we and many companies are the same just A15 later we saw the market of communication module of IOT sensor; A16 I think 3D online display will be widely used in	A10 community without smart cabinet; A11 self-service medicine cabinet; A12 express pile; A13 China express market demand is large; A14 smart home is just starting to rise; A15 Internet of Things communication module market; A16 3D display market; A17 crosstown merchant operation	B2 Discovering market blind spots (A10, A11, A12, A13,A14,A15,A16,A17,A18)

the future, now the market lacks a simple tool to make 3D; I came from photojournalism, there was no platform for photographers to exchange; A17 what I thought at that time was to bring together the businesses in the same city; A18 I put all the small games on a website to operate, and there was no company operating such interactive mini-games at that time.	market; A18 interactive mini-game operation market.	
A20 put intelligent courier sending and receiving cabinets in every community; A21 link user operation through app internet method; A22 replace the existing traditional way of receiving courier; A23 couriers are very willing to use and feel great convenience and improve efficiency. It used to take couriers 1 day to deliver 100 pieces of express, but now it only takes 2 hours. A24 then my technical partner began to organize the research and development of smart home IOT control module; A25 we began to develop 3D display technology first to solve the technical entry problem; A26 at that time I thought 3D display was relatively new, so I tried to use the technology of moving 3D; A27 from the competitive point of view, we mainly do localization services, then similar to the public A27 From the competition point of view, we mainly do localization service, so similar to the public, Meituan, can be considered our competitors. Through the final payment, ERP SaaS mall operation body; A28 I first build a public number, write some works of photographers to start; A29 people are more and more used to short and quick communication, H5 mini-games are more interesting than general WeChat tweets, can make business marketing easier, increase the interaction of friends, to achieve better social communication effect	A20 community placement of smart cabinets; A21 app internet operation; A22 replacing traditional courier collection methods; A23 improving efficiency; A24 smart home IOT module development; A25 3D display technology development; A26 3D display method cut-in; A27 merchant payment cut-in; A28 interviewing photographer cut-in; A29 interactive mini-game content provision cut-in.	B3 identification business entrance (A20, A21, A22, A23,A24,A25,A26,A27,A28,A29)

A30 recruit new employees, mainly business, sales positions; A31 then also put the team that had done back to the single cabinet experience over to study technology; A32 now the first batch of 40,000 cabinets will be connected to Taobao; A33 I was looking for a technical partner is my classmate, specializing in the study of the Internet of Things module; A34 I cooperated in the University of Electronic Science and Technology a training practical training room; A35 headhunter recruitment of product managers, we A36 We also integrated Ali and Jingdong platform, integrating their business resources; A37 We went inside the game industry to constantly find 3D technical talents; A38 We did an introduction to the new agricultural retail in the Intercontinental Hotel and conducted a cooperative alliance launch; A39 The first cooperation was with telecom. We connected the telecom IPV with the Internet; A40 we produced several original "100,000+" scripts, with more than 600,000 fans at the end of the year and over 100 million readers for the year; A41 I started to put ads in Baidu, looking for customers both online and offline	A30 recruitment of new employees; A31 back to the single cabinet team integration; A32 intelligent cabinet integration Taobao platform; A33 looking for technical partners; A34 university cooperation; A35 headhunting recruitment; A36 industry alliance; A37 introduction of technical personnel; A38 introduction of cooperative alliance; A39 cross-industry cooperation; A40 operational integration; A41 customer resources	B4 Resource Integration (A30, A31, A32,A33,A34,A35,A36,A37,A38,A39, A40,41)
A42 technical research to solve the problem of retrofitting the return counter; A43 centralized BD business development department to quickly seize the time to put the smart counter into more communities; A44 in the decision to carry out the national business, the company also opened a board meeting and decided to raise 750 million; A45 now all self-built, and no mergers and acquisitions; A46 our technical boss worked overtime every day and began to study the technology of smart home IOT module. A47 we established a 30-person technical research and development team; A48 as long as the merchant's products are good, we can accept them into our membership system, thus we will also become extremely advantageous; A49 because the integration of supply chain finance can integrate many enterprises, for example, we held our launch in Shangzuo to integrate 12 leading enterprises; A50 on weekdays people find interesting and hot photography topics will give the editor less information sources, editor less will write the story, others are responsible for distributing the content to the daily Express, today's headlines, UC headlines and other news	A42 Technology attack; A43 Capture community; A44 Financing preparation; A45 All self-built; A46 Focus on technology; A47 Focus on technology; A48 Membership access; A49 Attack leading customers; A50 Focus on content operation; A51 Financing	B5 Resource mix and focus of effort on opportunities (A42,A43,A44,A45,A46,A47,A48,A49, A50,A51)

aggregation platform to go; A51 my is a company in Hangzhou to invest in the Internet, invested part of the money to operate the interactive mini-game platform;.		
A52 We first transformed the return cabinet into an intelligent civilian cabinet; A53 behind the continuous focus on the product technology iteration of the civilian smart cabinet; A54 from the beginning to 13 years are not much change, all the people came in to do the grassroots work. A55 with the development of technology, smart home products technology is increasingly beyond the simple function, and gradually achieved the replacement of many complex repetitive labors; A56 This tool, to 3D designers, they can create this 3D content, 3D designers he did not have this tool he could not create. A57 The whole system is an urban digital business circle operation system including merchants, operation partners and consumer members; A58 The whole product system includes merchant system (Mija Store Owner APP), operator tools (Mija Partner APP) and member distribution (Mija Life APP and WeChat client), which is our Super A59 The founding team of Mija all came from journalist background, and they have a passion for news content, so when they started Mija, they used self-publishing and third-party news aggregation platforms to distribute photography industry information and original content.	A52 bill-back cabinet renovation; A53 technology enhancement; A54 focused products; A55 smart home features; A56 3D designer tools; A57 digital business circle; A58 super cashier; A59 photography content distribution; A60 interactive mini-games	B6 Clear primary and secondary relationships (A52, A53, A54,A55,A56,A57,A58,A59,A60)

A61 The boss mentioned in the meeting that he had seen the express intelligent shipping and receiving cabinets abroad; A62 All the problems will be summarized when expanding outward, we call it the conditions, what is the way to expand, what is the strategy, the cost standard, the agreement, summarize a set to become a treasure trove, the treasure trove for new employees to use; A63 The hardware standard is not mature, it is extremely difficult to coordinate the products of different systems; A64 We A64 We are the "tools + content" platform model. Adobe is the best tool in the world is Adobe, Adobe is the Photoshop company, about 100 billion dollars in market value. The best content library is Visual China, which is a photographer who takes pictures and sells them. A65 We empower traditional offline businesses with big data by providing a SaaS business operation system, a member e-account system, and a transaction-based Mija algorithm alliance. develop the 'Hoo Hoo Game' platform, which allows enterprises to save multiple inputs in game development by visualizing the form of module processing.	A61 Smart cabinet seen abroad; A62 Expansion strategy; A63 Inconsistent product standards; A64 Tools + content platform; A65 Mija algorithm alliance; A66 New retail supply chain management; A67 Visualization module	B7 Knowledge Convergence (A61, A62,A63,A64,A65,A66,A67)
A68 our team before to do the bank electronic return counter experience, now do express pickup cabinet; A69 before we also started a lot of start-up projects; A70 Park total said at the meeting, we are doing the return counter, before to do bills, now the cabinet enlarged can be loaded parcels on the line, which is not difficult for us; A71 later we applied the smart home product technology to the development of the Internet of Things communication module; A72 Our president Liao has been in 3D industry for eighteen years, before he did the Olympic Water Cube 3D visual performance project, now the boss wants to instrumentalize and standardize these experiences; A73 Our team also has people from the game industry, applying 3D technology from the game industry to the non-game industry is also our goal; A74 The original reason we decided to do Mija Technology at that time was that I was initially in Chengcang, at that time I felt A75 I seized the opportunity in an internal project of the group and was transferred from a photo journalist to the project director of Chengdu Photo Network. transformation and upgrading, the situation was	A68 previous technical experience; A69 previous entrepreneurial experience; A70 smart cabinet experience; A71 smart home technology experience; A72 ten years of 3D industry experience accumulated; A73 game industry technology experience; A74 into warehouse experience; A75 photo network work experience; A76 campus entrepreneurial experience; A77 communication business experience	B8 business experience accumulation (A68, A69, A70, A71, A72, A73, A74, A75, A76, A77)

serious." After a detailed market analysis and industry analysis, I decided to set up a company in 2013 to transform into the Internet industry.		
A78 This also has a serendipity, SF including foreign countries already have this case very early; A79 the United States federal, Germany ups using self-service equipment machine to receive the case a long time ago. A80 SF was the first to have this idea, discussed with us; A81 our company engaged in a company-wide innovation about express easy, what ideas can be put forward. A82 domestic Xiaomi is also doing A83 foreign Sketchfab and we are doing the same 3D display, the display effect is very good, 3D designers are also more; A84 from the competitive point of view, we are mainly doing localization services, then similar to the public Dianping, Meituan can be considered our competitors. But we are from the point of doing payment, then some payment end is also our competitors; A85 photography large industry each link is basically a separate war, information, users, resources cannot be connected to each other, a single link enterprise scale are very small, the whole photography industry only one do photography pictures IP listed company; A86 only after the discovery of the system integration business is my best.	A78 Domestic Case; A79 U.S. Case; A80 Exploring Shunfeng Conference; A81 Courier Easy Vision; A82 Competitors; A83 Competitor Analysis; A84 Competitors; A85 Industry Analysis; A86 Business Understanding	B9 increase knowledge association (A78, A79, A80, A81, A82, A83, A84, A85, A86)

A87 Initially, there were only collection pieces, information about some merchants in the surrounding area. A88 Then it was updated once a month, then loaded with financial, medical, and cabinet-based access; A89 What was actually accumulated during the experiment was not only product experience, but also market experience and capabilities. New capabilities were formed in this process. From the beginning we do not know what problems will happen; A90 in the time of continuous doing, the general environment, with peers, experts continue to communicate, we just consider something to the top Hardware infrastructure issues, 4G communication is currently very mature, but still cannot meet the home interconnection low power consumption, low cost, wide coverage and large capacity needs; A91 future we think 3D, AR, VR A91 in the future we think 3D, AR, VR, including holographic, this kind of it will be popular. But the format of this content is not, so our platform on the output of this 3D content format; A92 we found the problem from the internal, the impact of that time the object is the agent, the impact on the offline channel is not yet very obvious, at that time are online and offline a confrontational relationship, I felt at the time, a technology, can only improve efficiency, and cannot change the product performance, experience. I think they can carry on the fusion; A93 had a lengthy meeting to imagine a lot of new features for the new community, and then discussed the feasibility of development with technical director Xu Dayu one by one; A94 began to focus more systematically on the technical development of artificial intelligence	A87 Overlay merchant information; A88 Overlay financial and medical information; A89 Product and market experience; A90 Communication with expert peers; A91 3D format; A92 Product experience; A93 Community function; A94 Technology development	B10 Expanded knowledge (A87, A88, A89, A90, A91, A92, A93, A94)
A95 the meeting also discussed how to combine the electronic return counter and the medicine sales counter together for automatic medication pickup; mobile payment began to be popular, I had a flash of light, we just need to combine mobile payment, we can quickly reach the merchants; A96 because their own technology is relatively backward compared with the big manufacturers, so it is difficult to be accepted by the dominant ecosystem, so in most cases can only be self-sustaining, began to A97 we met and decided to consider the mobile 3D program, abandoning the initial backward client 3D technology program; A98 the mobile Internet	A95 Consider combination with medicine pickup cabinet; A96 Consider other industry opportunities; A97 Consider other technology solutions; A98 Decentralization; A99 Multiple options; A100 Consider security market	B11 consider a variety of options (A95, A96, A97, A98A, A99, A100)

immediately opened my mind, "decentralization" is an ideal of mine, A99 in addition to chasing hot topics, recommend new young photographers, is also our rice A100 building security feel more resources around the customer relationship, always want to try to try		
A101 In fact, entrepreneurial resources, or rely on their own to be more active to discover, rather than that passive to wait for him人 or wait for social resources to find you; A102 found a company in Shanghai much earlier. A103 competition inside the smart home industry is too fierce, the product market cannot do the big manufacturers, their supply chain costs are much lower than ours, we began to re-choice the track; A104 3D project customization is not sustainable, must be transformed to the product; A105 H5 3D is the future trend of the industry, the user to see a 3D display is not possible to go down a lot of APP. Need lightweight 3D; A106 just tools users use and go away, precipitate no traffic, for this reason, we create a community, so that the user traffic precipitation; A107 I just began to understand that the Internet is actually a thing to enhance efficiency, digitalization can produce more standardization, I have a very deep understanding of this, but there is one thing I did not understand clearly, since the Internet is to enhance This is a painful understanding of a phrase, which I realized not long ago to Ali to visit a business, Internet companies are essentially robbing traditional enterprises rice bowl, Internet companies is to take away the value of many traditional enterprises at once, if I was able to one is to this point, I will not feel so hard these years. a108 Compared to new media, the community is more stable, it is difficult to enter an explosive amount of growth, but they are a virtuous cycle. a109 before interactive small game project amount is too small, it is difficult to earn money, to do some big projects through customer relationship project operation way, in order to drive the company to run	A101 Active access to resources; A102 Must occupy first-tier cities; A103 Differentiated competition; A104 Product thinking; A105 Technology shift; A106 Community thinking; A107 Efficiency first; A108 Community thinking; A109 Project operation thinking	B12 Transformational Thinking (A101, A102, A103, A104, A105, A106, A107, A108, A109)

A110 We have explored many businesses in the past 15 years. For example, laundry, combined with courier easy. A111 at the beginning we invested in the bank return counter business; after the boss went abroad to see the express intelligent pick up and send cabinets, he came back hoping to do a combination with self-service medicine cabinets to make a self-service medicine cabinet; A112 later by investing in a startup company to do the people's intelligent net grid cabinet; A113 at that time, we felt that we could do the communication module inside the industrial Internet of Things, and we could avoid the giant like Xiaomi A114 we demolished the technical team of 30 people in our board meeting and asked to replace the technical team and technical solutions; A115 we also laid off the marketing team, and through the preliminary exploration, we were more inclined to get customers through online; A116 he could do a shopping center well and manage it well, and then connect other shopping centers through the Mija system, and this kind of cooperation looked promising. Very good. But it's too hard to transform traditional thinking to the Internet. By 16 years, mobile payment started to become popular, and I had a flash of light at that time, we just need to combine with mobile payment, we can reach merchants quickly.A117 Always thinking about what young people need more, and always thinking about how to deliver benefits to the tower users in the community and help the tower users to grow.A118 Then we turned off the Internet interactive mini-games and started to think about the smart security market.	A110 Consider the combination of laundry and courier easy; A111 Consider the combination of return counter and medicine pickup counter; A112 Invest in a startup company; A113 Industrial IOT; A114 Replace technical team; A115 Change marketing strategy; A116 Select mobile payment; A117 Mi pat community; A118 Intelligent security	B13 Reconsideration Program (A110, A111, A112, A113, A114, A115, A116, A117, A118)
A119 maximizing the utilization of our devices, which we have been doing for the past two years to make more people use it, has been the most important direction of our work. a120 we want to build an ecology around the express easy; because we don't know if our project can be the internet thing we expect. a121 there are many industrial IoT devices, but the communication of these IoT devices is a problem, we just A122 We started to develop Web3D engine, and we also focused on the domestic and international product forms of Web3D, such as Sketchfab, product model. A124 we not only opened the Mi pat open class, but also launched the Mi pat	A119 Focus on device utilization; A120 Building around ecology; A121 Industrial IoT; A122 Web3d; A123 New retail; A124 Open class; A125 Smart security	B14 Focus on entirely new areas (A119, A120, A121, A122, A123, A124, A125)

book. a125 we started to focus on the construction of smart cities, such as smart sites, smart campuses and other security, emergency response in this big area.		
A126 was actually a business where everyone was responsible for one piece of business each. At that time to do new things, there may be a new try every day new situation, every day there is a regular meeting system. We started to focus on doing convenient intelligent network cabinets; we put in convenient intelligent grid cabinets on a large scale; A127 Park always innovated something and especially liked to arrange it first-hand. Then the personnel would give back to him the first-hand information.A128 decided then that we could try it out and came back and made two prototypes. Let's just say we went to scale while thinking about it. Our box did not get the user backlash.A129 Through the analysis of their own, we rejected the investment of investors and began to work on the development of a platform to provide traditional enterprises with IoT solutions; A130 hope to attract the 3D designer to come. A131 In addition to the community, we also hope to provide a 3D material library; A132 We are through the borderless business management, it seems to do a guide between business, but in fact will generate business data and business traffic. A133 Because of these business data and business traffic, we intend to cooperate with these vertical fields The way we cooperate is to choose to use supply chain finance to cut in. I was in ChengCang when I wanted to do a virtual mall A134 defined as a professional original picture community, the new version added scoring, reward, daily list, weekly list, monthly list and other columns; A135 developed a campus big data platform, and the URA cooperation to build a smart site big data platform.	A126 Try smart network cabinet; A127 Try something new; A128 Try a prototype; A129 IoT platform; A130 3D tools; A131 3D content; A132 Telecom cooperation; A133 Supply chain finance; A134 Photo community; A136 Big data platform	B15 Try different products or services (A126, A127, A128, A129, A130, A131, A132, A133, A134, A135, A136)

A137 did not spread at the same time may still feel that after the promotion inside a region, there may be no new problems in a city, need a validation; A138 whether it is a product class or a service class, as long as there is an opportunity to take a relatively fast way to let the user contact. a139 at the beginning decided to charge the cost of property management, later found that the property company is not particularly willing to accept. A140 we started to do smart agriculture, smart industry, smart building solutions. a141 then the designer side is the main customer acquisition, to bring together designers. a142 tools online, we try to push to have industrial design or equipment companies, so they use the tools. a143 the first cooperation is with telecommunications cooperation. A144 later we think the traffic is in the community, digital advertising is also a kind of traffic, I was also in the community elevator inside the elevator screen later also think this cannot do, and began to explore the way out. A145 began to open a community fresh store, fresh store model and the same as the hippo fresh model, are walking organic boutique fresh, I opened two community fresh store, the residents' acceptance is very high, the traffic also increased dramatically.A146 In addition to chasing hot topics, recommended new youth photographers.A147 I began to contact the URA, China Wuye and other construction company customers.	A137 Regional Attempt; A138 Attempt Fastest Contact Customer; A139 Attempt Property Management Customer; A140 Smart Industrial Customer; A141 Designer Convergence; A142 Industrial Enterprise; A143 Telecom Customer; A144 Community Property; A145 Fresh Food Customer; A146 Youth Photographer; A147 Construction Customer	B16 try different customers (A137, A138, A139, A140, A141, A142, A143, A144, A145, A146, A147)

A148 through the interaction of the package stick up the user, stick up the courier staff, we now want to do business is the business of the user, and the courier business; A149 the simplest is to collect courier fees, with the courier collection. The charge trial was in the second half of '13. A150 business model change is formed later, the business model at the earliest time people think is to collect money from couriers, overdue fees, advertising fees, shipping fees. a151 In providing traditional enterprises with IoT technical support, reduce their development costs while accumulating their own technology. a152 If designers used for learning functions are free, so the future A153 This is our "tool + content" charging model. A154 I only sell accounts and content. We are "tools + content". The core function of tools is free, and there are value-added services, which means he will have traffic package in it. A157 Create a business community, through urban traffic pools, improved industrial ecology, innovative business models, but our most important thing is to create a business community through supply chain finance. a158 After the MiTai content ecosystem is established, the copyright value of a large number of high-quality images on the platform gradually emerges. A159 find incremental income sources for photographers, to maximize the value of the photographer's work, will be the business model Mi pat efforts.A160 I think the market of intelligent architecture is very large, and the degree of digitization is very low, we through the cut first after cooperation into, what can be done later, around the customer-centric do.	A148 Collecting advertising fees; A149 User and courier business; A150 Collecting courier industry, overdue fees, advertising fees. A151 IoT technology services; A152 Tool fees; A153 Content copyright; A154 Value-added services; A155 SaaS mall operator; A156 Borderless business management; A157 Supply chain finance; A158 Photo copyright; A159 Photographer share; 160 Smart building customers	B17 Trying different business models (A148, A149, A150, A151, A152, A153, A154, A155, A156, A157, A158, A159, A160)

A161 reduce the burden of property, improve security; A162 products are all our own iteration. (Cold weather, adapt to the temperature; rain, waterproof) According to the promotion process, the occurrence of predictability, has emerged the need for products to do enhancements, we do our own product improvements, iterations. A163 back to the single cabinet into the express box inside several technical difficulties, previously a gear belt, now developed a lock. A164 our intelligent air switch system solutions, support the monitoring of remote electrical equipment, determine the cause of electrical equipment failure and according to the preset conditions of automated processing. a165 we also provide professional solutions in the smart home, photovoltaic power intelligent regulation, power environment monitoring, a166 we have currently submitted more than ten patent applications. A167We first build a 3D tool based on our 3D technology.A168Then form a content community based on the tool.A169Again form a 3D material library.A170The massive transaction data and closed-loop collection and payment management solution of Mija SaaS platform is the underlying framework for new retail supply chain management.A171He has not only opened Mija public courses, but also launched Mija books and Mija community. A172Our construction elevator monitoring solution supports temperature, humidity, voltage, power, up and down count, changing the state of no monitoring at construction sites.	A161 Improve product safety; A162 Product enhancement; A163 Solve technical problems; A164 Air-opening system solutions; A165 Keep launching new products; A166 Apply for patents; A167 3d tools; A1683 D community; A1693 D material library; A170 New retail supply chain management platform; A171 Mi pat community; A172 Smart building solutions	B18 product variations (A161, A162, A163, A164, A165, A166, A167, A168, A169, A170, A171, A172)

A173 electronic return counter business; A174 return counter business and the combination of the medicine business; A175 self-help people intelligent net grid cabinet. A176 we put the tool free out, so that all designers know that there are very good tools. Designers come to use it for free, that is, the free mode of the Internet, A177 to the back of it, we will transform this free into a fee. A178 You need to do the 3D display of the notebook, room display, we give you technical services. A179 Mobile payment started to become popular, I had a flash of light, we just need to combine mobile payment, we can quickly reach the merchants. A180.At the end of 2015, we temporarily stopped MiPai.com, which had 50,000 fans, to focus on MiPai New Media.A181 We later stopped our online interactive mini-game service.	A173 bill-back counter service; A174 medicine pick-up service; A175 smart counter service; A176 free service; A177 fee-based service; A178 3D technology service; A179 decentralization; A180 discontinuation of m-pat service; A181 discontinuation of mini-game service.	B19 service changes (A173, A174, A175, A176, A177, A178, A179, A180, A181)
A182 And the world's martial arts, only fast is not broken, no matter what to do, the efficiency of the first, especially the start-up, you are one step later, the competitive pair of hands will occupy the market; A183 with the most agile development way to shorten the cycle. We are now forming capital in the vertical field, there is no shortage of capital in the vertical field, but we have to make it quickly.A184 Our company's R & D basically works until about 10: 00 p.m. to get off work, constantly iterating and debugging hardware module products; A185 R & D we are also 2 weeks a product cycle to quickly iterate the product, and sometimes work overtime on weekends; A186 After endless overtime A187 Overtime is the norm in our startup company	A182 Efficiency First; A183 Shorten Development Cycle; A184 R&D Overtime; A185 R&D Overtime; A186 Standing Overtime; A187 Standing Overtime	B20 time change (A182, A183, A184, A185, A186, A187)
A188 We believe that a project that can solve the pain points of multiple parties and is free should be very marketable.A189 We are referring to Meituan and other such industries to set up, Meituan is generally 7-8 points, we set 3 points is actually very low.A190 Compared with new media, communities are more stable, it is difficult to enter an explosive growth, but they are a virtuous cycle.A191 In addition to distribution, Mija has added shared marketing. In addition to distribution, we have added shared marketing, which is like a traditional shopping mall, where we combine merchants; A192 we	A188 Product is free; A189 Low service fee; A190 Community strategy; A191 Shared marketing mix; A192 Personal service	B21 Competitive strategy changes (A188, A189, A190, A191, A192)

work closely with customers in the construction industry and then constantly track their changing needs.		
A193 we feel that to do the cabinet Santai is very strong, we go back to do the cabinet is confident; A194 in the past our team has the experience of doing electronic return cabinets, this history is very important; A195 Hu was in Huawei before, Yang was engaged in doing technical research and development work in Motorola before, based on the good prospects for the development of the Internet of things, give up the original generous treatment on the journey of entrepreneurship; A196 I was before A197 I am a very open person, I was in 97 years when I did some Microsoft training at that time to do acquisition, investment and merger work, I like to study the industry, the study of the Internet is more profound, but also contact with a variety of different business models; A198 Wang Qiang is from the photo journalist to Chengdu A199 Wang Qiang entered the Chengdu Photo Network to get the support of the group, and at the same time set up the Chengdu Image Art Center offline. a200 on the picture community platform we iterated three times, and accumulated a lot of experience in product technology.	A193 prior experience; A194 electronic return counter experience; A195 prior experience; A196 prior experience; A197 prior experience; A198 prior experience; A199 prior experience; A200 technical product accumulation	B22 Technology accumulation (A193, A194, A195, A196, A197, A198, A199, A200)
A201 we based on the return cabinet to transform; A202 smart home directly facing consumers, for the design, operating experience and appearance requirements are high, we business transformation to the industrial Internet of Things; A203 our first step there is a technology is the 3D engine technology, you can present the 3D model on the web page.	A201 Fundamentals of billfold cabinet technology; A202 Fundamentals of smart home technology; A203 Fundamentals of 3D engine technology.	B23 Fundamentals of Technology (A201, A202, A203)

A204 The technical team is mainly our own founding team, which has previous experience in doing bank returns. a205 the team is all technical staff, Mr. Hu and Mr. Yang are both from technical background. a206 I have been in Crystal Stone for many years before, and have been in the 3D industry; a207 Our team is basically from the University of Electronic Science and Technology; a208 The technical team is from the game industry more, 3D itself A209 after I found a technical team to design this system according to my requirements; A210 we are in the market to recruit the technical development.	A204 Founding Team; A205 Technology Entrepreneurship; A206 Technology Entrepreneurship; A207 Electronic Science University; A208 Game Industry Talent; A209 External Technology Team; A210 Technology Recruitment	B24 Technical personnel (A204, A205, A206, A207, A208, A209, A210)
A211 we did not know how to take the courier easy cabinet pushed to the property; A212 we have been exploring how to charge the problem at the beginning, lack of C-end Internet industry experience. a213 Hu two previous external cooperation failed, of course, from this also summed up some lessons. a214 we are technical team came from, in the market this piece suffered a big loss; a215 at that time also A216 the development prospect of the mall at that time is still very good, but we found the problem from the internal, the impact of that time the object is the agent, the impact on the offline channel is not very obvious. A217 out of the rice shoot bug-ridden, the user experience is not good, the product cannot be rapid iteration. A218 we are also in the intelligent building section is Continuously trial and error, have not done this piece of business before, learning as we go.	A211 lack of market experience; A212 lack of experience in the Internet industry; A213 lack of market experience; A214 lack of market experience; A215 lack of product experience; A216 lack of market experience; A217 really technical product experience; A218 lack of market experience	B25 Lack of business experience (A211, A212, A213, A214, A215, A216, A217, A218)
A219 we also have not done the Internet community business; A220 community property management these resources we do not have, we need to go one by one to attack business development; A221 at that time I finished the credit card overdraft to pay the staff; A222 in this era of the Internet customer acquisition, that is, to obtain customer traffic is more difficult; software and hardware no customer buy, marketing difficulties; A223 we then wanted to A223 we wanted to do cross-industry alliances, such as bank cards, points exchange, but there was no such technical means, so the efficiency of cross-industry alliances was extremely low, and we could only sign contracts offline. a224 the technical team could not solve these problems, and the money invested was a drop in	A219 lack of market business resources; A220 lack of community resources; A221 lack of capital; A222 lack of customers; A223 lack of technology; A224 lack of technology lack of capital; A225 capital	Lack of resources for B26 (A219, A220, A221, A223, A224, A225)

the bucket. a225 the company had no money, so I applied for a science and technology loan and government support policies.		
A226 our team's strength is to do the bank electronic return counter; A227 the team is all technical staff, I, Yang, are technical background; A228 we through the technology-driven entrepreneurship, always want to how to make products, polishing products; A229 in Hangzhou, surrounded by chatting Internet gurus, but in Chengdu, but the lack of such an environment. A230 I was with this initial investor A231 The technical team was unable to solve these problems, and the money invested was a drop in the bucket. A232 I was basically surviving on the government support policy, there was no money, no technology, no money to start a business.	A226 single resource; A227 technical origin; A228 technically driven; A229 single resource; A230 single resource; A231 no money, no technology, no resources; A232 no money, no technology, no resources.	B27 single source of resources (A226, A227, A228, A229, A230, A231, A232)
A233 business expansion of community properties to accept the placement of our convenient express intelligent shipping and receiving cabinets; A234 smart cabinet will become the closest to the community in the future among all the varieties of services the easiest way to help themselves at the door. a235 do IoT technology companies, technical hard power is the capital of survival. a236 3D design tools are easy to replace. So, we came up with the idea that only this content library, up to 10 or even 20 years are needed. A237 Our company, Mija Technology, was formally established in 2013 and positioned itself as a "borderless business management" company, providing SaaS business operation system, member electronic account system and transaction-based Mija algorithm alliance to empower traditional offline business with big data. A238 has developed into a new media matrix, community operation and offline photography ecosystem in the photography industry, especially in the area of smart city construction, such as smart construction sites,	A233 community property placement; A234 e-commerce cooperation; A235 community convenience smart cabinet; A236 content library positioning; A237 borderless business management; A238 photography circle ecology; A239 smart city service provider	B28 product positioning (A233, A234, A235, A236, A237, A238, A239)

smart campuses and other security and emergency areas.		
A240 back to the cabinet at the beginning is the bank's electronic return; A241 later we turned to the C side of the community district millions of users; A242 ultimate goal is a 24-hour community convenience platform; the first is very clear that we are the logistics industry, within 100 meters close to the user; A243 at the beginning of the positioning is the smart home technology service providers, later transformation customized A243 was originally positioned as a smart home technology service provider, but later transformed into a customized service to industrial IoT enterprises to provide personal services, such as smart agriculture, smart industry, smart building and other industries to provide a complete set of solutions, we provide comprehensive technical support from software to hardware, the software platform, positioned as a 4G interconnection module services for industrial IoT. Cultivate the designer market. Industrial design. Digital design, media art are 3D designers inside the universities. A245 We want every business in the digital era now, to their own central store, to build a digital neighborhood of association sharing. A246 Mi pat gathered groups of professional photographers and photography enthusiasts, I always consider what young people need more, but also always consider how to give the community of tower users to convey the benefits, to help tower bottom users to get growth; A247 construction companies and city operators are our customers.	A240 Bank e-Rebate; A241 Community Users; A242 Courier Customers; A243 Smart Industrial Customers; A244 Advertising Agencies; A245 Retail Merchants; A246 Photography Enthusiasts; A247 Construction Companies	B29 customer orientation (A240, A241, A242, A243, A244, A245, A246, A247)

After A248 was done in Chengdu, banks were also looking for us because it had gained momentum. Couriers, neighborhoods, people who use couriers, word-of-mouth publicity is bigger. The media did a report. A249 I found that traditional enterprises are precisely the huge stage for IoT to play, not that IoT can't change the tradition, but there is a deviation in understanding the demand between our IoT companies to traditional industries, and an IoT company that can't deeply understand the customer demand loses its value and vitality. a250 Because I think the future competitive barrier of the company is this content library, not the technology. A251 In general, our competitors are the localization service platform and the payment collection end. A252 The dissemination of new media content will expand the influence of rice pat, bringing the community to download users naturally new, new users to the community to provide quality material. a253 At present, we mainly do customer relations, personal service	A248 Scale; A249 Deep industry understanding; A250 Content library; A251 Localized services; A252 Community attributes	B30 competitive positioning (A248, A249, A250, A251, A252)
A253 boss let us try to load cosmetics business to expand sales; A254 around the community to do intelligent supporting equipment, invested tens of thousands of express cabinets; A255 we started with offline sales. Later on, with a market business, overseas customers we through the Amazon platform, domestic we through the Alibaba platform, online customer acquisition conversion; A256 initially we are sales companies to find a company to talk about one by one, later we through community operations online customer acquisition open conversion. a257 operator is initially my salesman, later plans to cooperate with more businessmen (such as hungry food delivery personnel, drip A258 are community customers who take the initiative to find us to do a picture show, or custom services; A259 is mainly to go to socialize every day, hook these construction customers, good customer relations	A253 Trying to load business; A254 Investing in tens of thousands of express cabinets; A255 E-commerce platform sales; A256 Online sales; A257 Offline sales; A258 Online community customer acquisition; A259 Offline sales	B31 Marketing and Sales (A253, A254, A255, A256, A257, A258, A259)

A260 one is the front terminal manufacturing and production x system, A261 the second is the operation smart cabinet process, A262 the third is the operation of the backend management. a263 R&D internal system to be managed well, through the e-commerce platform to gain customers, we have a business customer service; then also established an after-sales implementation team, we extract customer demand, feed the software and hardware product development; A263 gradually established internal R&D process, in the market we mainly acquire customers through the community, we have a community operation team and system; the whole product line of A264 includes merchant system (Mija Store Owner APP), operator tools (Mija Partner APP) and member distribution (Mija Life APP and WeChat client) this is our super cashier + SAAS operation system, it supports card, WeChat, Alipay, A265 core we still serve our photographer users and operate users. a266 project collection is still difficult, each project is a separate process, so we have project management	A260 Manufacturing Production Process; A261 Operation System; A262 Backend Service; A263 Mall System; A264 SaaS Operation System; A265 Operation System; A266 Project Management Process	B32 flow system (A260, A261, A262, A263, A264, A265, A266)
A267 ease of use is to ensure user satisfaction; A268 good service experience; we have a special operations department to do this promotion. a269 at the beginning, after the cabinet is installed, send an individual to squat here for two weeks, after the courier comes, talk to the courier and explain to the owner. a270 we set up a professional business customer responsible for pre-sales service for online customers, project delivery on we A271 SaaS-based service system, including the online operation system of the tool platform, after-sales guidance on the use of tools, A272 Payment is membership; transaction is data. A273 We can easily locate consumer groups in our system, and we have achieved very good results with this kind of traffic attraction. There are many successful cases. The Internet is actually a long-tail effect, but Mija has carried out more accurate marketing on top of the long-tail effect.A274 New media content dissemination will expand Mija's influence and bring new users to the community to download naturally, and the new users will provide quality material to the community.A275 In the intelligent	A267 Ease of Use Guarantee; A268 Operation Service; A269 Standard Explanation; A270 Pre-Sales Service; A271 SaaS Service System; A272 Data Analysis; A273 Data Analysis; A274 Community Operation; A275 Customer Service	B33 Service Standards (A267, A268, A269, A270, A271, A272, A273, A274, A275)

construction industry, we mainly continue to improve our customer service capabilities		
A276 monthly active number of 300,000-500,000. app users registered most of the self-help needs, then SMS convenient record query. a277 courier personnel registered 500,000-600,000. The number of people doing user's business services nationwide is over 50 million. a278 more than 5 million registered through APP. a279 only 1-year online 3D designer users we broke 50,000+.	A276 600,000 active users; A277 600,000 couriers; A278 over 5 million registered users; A279	B34 user size (A276, 277, A278, A279)
A280 bank return counter business single, banking business tends to be electronic; A281 also charge users overdue fees, can speed up the flow of express parcels. a282 advertising is also a profitable aspect, in the previous thought. Courier easy itself is only to provide services did not generate commercial value. a283 we based on the sea amoy this form, for the on the middle and high-end family. (Small and light) Next is the installment loan, A284 profit model is a basic concept, four basic incomes: courier overdue, advertising, shipping, courier fees. The rest: pro-conservation. a285 Many customers buy in bulk Many customers buy IoT 4G communication modules and software licenses in bulk; in 2020 we did 10 million in IoT module hardware sales, and we expect to do 20 million this year. a286 This is where we sell tools, sell content. Tools is SaaS, content is to sell content copyright. A287 We serve more than 20,000 merchants, with an annualized transaction size of 3 billion yuan. a288 Our revenue is relatively small, but we can maintain our team, mainly relying on social photographers to do activities,	A280 Initial banking revenue; A281 Collection of express overdue fees; A282 Advertising fees; A283 Financial services; A284 Shipping fees; A285 IoT device sales; A286 Tools + content copyright sales; A287 Merchant services; A288 Smart building integration business	B35 Operating income (A280, A281, A282, A283, A284, A285, A286, A287, A288)

with an annual income of about 6 million. a288 Integration business is expected to do 100 million this year.		
A289 word-of-mouth publicity is relatively large, the media made a report, we decided to do big; A290 future through e-commerce or through cooperation, in fact, let them come on top to use us this traffic, data to use his value 291 we work closely with traditional enterprises, in the traditional enterprises to provide technical support for the Internet of Things, reduce their development costs at the same time, accumulate their own technology, deepen their understanding of the industry A292 We provide standardized 3D design tools with certain technical barriers, and then acquire customers through online communities to reduce customer acquisition costs, while precipitating community content to form a platform effect; A293 We have integrated many powerful businesses, including tobacco, wine, aquatic products, milk, snacks, which have formed a large scale, and now we only need our Mija technology and supply chain to A294In these years I think our biggest pain point and advantage is that after so many years, we have been able to make many things very simple and the functions have been very refined.A295For the localization service platform, our model still has certain advantages and we can win from the merchants.A296After the rice pat content ecosystem is established, the copyright value of the platform's large number of high-quality A297 I mainly do customer relations.	A289 scale; A290 traffic advantage; A291 service technology advantage; A292 tool + community + content platform; A293 scale effect; A294 function refinement; A295 scale; A296 content ecological construction; A297 strong customer relationship	B36 Barriers to Competition (A289, A290, A291, A292, A293, A294, A295, A296, A297)