

**Driving Forces of Strategic Innovation in IT Trade Enterprises: An
Empirical Study in Chengdu, China**

YUAN Cheng

Thesis submitted as partial requirement for the conferral of the degree of

Doctor of Management

Supervisors:

Professor Virginia Trigo, Professor, ISCTE University Institute of Lisbon

Co-supervisor:

Professor SHAO Yunfei, Professor, University of Electronic Science and Technology of
China, School of Management and Economics

July 2015

Driving Forces of Strategic Innovation in IT Trade Enterprises: An Empirical Study
in Chengdu, China

YUAN Cheng

- Spine -

**Driving Forces of Strategic Innovation in IT Trade Enterprises: An
Empirical Study in Chengdu, China**

YUAN Cheng

Thesis submitted as partial requirement for the conferral of the degree of

Doctor of Management

Jury

Doutor Lu Ruoyo, Professor Catedrático da UESTC;

Doutor Sun Ping, Professor Catedrático da UESTC;

Doutora Maria José Aguilar Madeira, Professora Auxiliar com Agregação da Universidade da
Beira Interior;

Doutora Virgínia Maria Trigo, Professora Associada Aposentada do ISCTE - IUL

July 2015

Abstract

In recent years, with the background of IT companies gaining both in quantity and strength in China, enterprises are facing a more competitive environment. In order to maintain sustainable development, IT enterprises should make continuous innovations in technology, capital operation, analysis of the market orientation, and the choice of the ways for internal management and marketing. For IT trading enterprises, operation, market positioning, marketing methods and strategic management are particularly important. IT trading enterprises are facing more and more complex competitive environment. How to preserve their competitive advantage? How to maintain profit? How to cope with competition in the same industry? In the face of these strategic issues, which closely relate to strategic innovation, IT trading enterprises still have a long way to go.

Strategic innovation means that, in order to cultivate and develop their core competitive ability and achieves the goal of improving organizational performance and competitive advantage, enterprises try to grasp and use the actual or potential opportunity through specific organizational innovation, business model innovation and innovation in supply chain management. This study uses IT trading enterprises as the research object, and focuses on factors influencing their strategic innovation. In the empirical study part, by means of a questionnaire, it verifies the conceptual model of the relationship between the driving forces of strategic innovation and strategic innovation. Taking the company Jin Guan Tong Li as a case study, it interpreted the findings of the empirical study, through the experiences of this IT trading company.

Here are the conclusions of this thesis:

1. Competitive competence, cooperation with other companies and supply chain management has a positive influence on enterprises' strategy innovation.
2. The hypothesis that business performance, strategic flexibility and market competition strategy has a positive influence on enterprise strategic innovation is limited in validity.

The thesis analyzed and discussed the findings of the empirical study and gave suggestions to the strategic innovation of IT trading companies.

Key Words: IT trading enterprises; strategic innovation; dynamic influencing factors; business performance; competitive competence

Classification JEL: M19

Resumo

Recentemente, o desenvolvimento de empresas de alta tecnologia na China, quer em número quer em impacto, trouxe uma envolvente cada vez mais competitiva. A fim de manterem um desenvolvimento sustentável, estas empresas têm de realizar inovações contínuas a nível tecnológico, em termos de operações de capital, de orientação do mercado e das escolhas na gestão interna e no marketing, elementos de particular importância para as empresas de alta tecnologia que enfrentam uma envolvente cada vez mais complexa e competitiva. Como manter a sua vantagem? Como manter o lucro? Como lidar com uma concorrência crescente dentro da indústria? Se considerarmos estes aspectos estratégicos diretamente ligados com a inovação estratégica, muitas empresas de alta tecnologia têm ainda um longo caminho a percorrer.

A inovação estratégica implica que, para cultivar e desenvolver as suas competências chave e atingir o objetivo de melhorar o desempenho organizacional e a vantagem competitiva, as empresas procuram capitalizar oportunidades atuais ou potenciais através da inovação seja a nível organizacional, de modelo de negócio, ou da cadeia de abastecimento. Este estudo focaliza-se em empresas comerciais de alta tecnologia e nos fatores que influenciam a sua inovação estratégica. Na parte empírica, através de um questionário, testa um modelo conceptual que estabelece a relação entre as forças motoras da inovação estratégica e este construto. Considerando a empresa Jin Guan Tong Li como um estudo de caso, a tese interpreta os resultados do questionário à luz da experiência desta empresa.

As principais conclusões são:

1. As competências competitivas, a colaboração com outras empresas e a gestão da cadeia de abastecimento influenciam positivamente a inovação estratégica das empresas;
2. É limitada a validade da hipótese de que o desempenho, a flexibilidade estratégica e a estratégia competitiva no mercado têm uma influência positiva na inovação estratégica da empresa.

A tese analisa e discute os resultados do estudo empírico e dá algumas sugestões para a inovação estratégica das empresas de alta tecnologia.

Palavras chave: Empresas comerciais de TI; inovação estratégica; fatores dinâmicos; desempenho organizacional; competências competitivas

Classificação JEL: M19

Acknowledgments

The writing of this thesis has gone through many difficulties, and finally it is completed. Although we cannot say it is perfect, the thesis represent a lot of people's efforts. I sincerely thank those who gave care and support on my writing: my friends, classmates, teachers and family members. Without their encouragement and guidance, the thesis could never be completed. Thank you all. Sincerely wish you good health and good luck!

A saying says, "Live to learn." I have been a veteran in the corporate world for many years and I am fully aware of the importance of learning when being faced by an increasingly complex market environment. In the past years, I have seized some opportunities, but also lost a lot of opportunities due to my personality but more to the lack of knowledge. So, I decided to come back to the university to learn the latest theoretical research, to broaden my horizon and to enhance my management capabilities.

First of all, I appreciate both ISCTE-IUL and UESTC Economics and Management School for offering me a learning platform, the Doctor of Management program. During the learning process, I fully experienced the beauty of knowledge, and learned about the world's most cutting-edge management theory. I have met a large number of very capable and young people, who have helped me to grow quickly.

I sincerely thank my doctoral supervisor Professor Virginia Trigo. She is a very attractive teacher and she is learned, beautiful, humorous, amiable, generous and rigorous. She enjoys a high reputation in the international academic community. And we all consider Professor Virginia Trigo is a cultural ambassador of China and Portugal. During the process of writing up my thesis, she has given me a lot of help, for which I would like to extend my warmest thanks. She has never ignored to modify my paper despite her busy schedule, for example she use the time of airline commuting to modify it, thank you so much.

My thanks also go to Professor Shao Yunfei who has given me a lot of instructions and guidance. She is very committed and I often receive her emails sent at 2 a.m. Without her comments, I will never complete my thesis.

Learning is a lifelong process. I will uphold the university, college, and instructor's teachings and continue to study hard and strive to develop my company into a listed company.

After learning in UESTC for several years, I would also like to thank those who taught me.
Last but not least, I'd like to thank my family, thank you for your support and understanding.

Contents

Chapter 1: Introduction	1
1.1 Research background and Significance.....	1
1.1.1 Research background	1
1.1.2 The significance of the research.....	3
1.2 Research Questions	4
1.3 Research Methodology and the Originality of the Research.....	4
1.3.1 Research methodology	4
1.3.2 The contribution of the research.....	5
1.4 The Outline of This Thesis.....	5
Chapter 2: Literature Review	7
2.1 Strategic Management Theory	7
2.1.1 Enterprise Strategy Concept.....	7
2.1.2 Strategic Management Concept	8
2.1.3 Theory of Strategic Management.....	9
2.2 Innovation Theory	13
2.2.1 Concept of Innovation	13
2.2.2 Technological and Institutional Innovation.....	14
2.3 Strategic Innovation	16
2.3.1 The Concept of Strategic Innovation	16
2.3.2 The Driving Forces of Strategic Innovation.....	17
2.3.3 Measurement of Strategic Innovation	24
2.3.4 The impact of the driving forces on strategic innovation.....	27
Chapter 3: Hypotheses and Research Model	29
3.1 Hypotheses	29
3.1.1 The relationship between business performance and strategic innovation ..	29
3.1.2 The relationship between competitiveness and strategic innovation	30
3.1.3 The relationship between strategic flexibility and strategic innovation.....	30
3.1.4 The relationship between market competition and strategic innovation.....	31
3.1.5 The relationship between enterprise cooperation and strategic innovation.	32
3.1.6 The relationship between supply chain and strategic innovation.....	33
3.2 Research Model.....	35

Chapter 4: Research Methodology.....	39
4.1 The theoretical foundation of the research methodology.....	39
4.2 Data collection.....	40
4.3 Data Analysis Method.....	41
Chapter 5: Data Analysis.....	43
5.1 The Design of Questionnaire.....	43
5.2 The Description of the Sample Companies.....	43
5.3 Data Analysis	45
5.3.1 Scale Reliability and Validity Testing	45
5.3.2 Statistical Analysis	52
5.4 Analysis of results	58
5.4.1 Discussions.....	58
5.4.2 Implications.....	61
Chapter 6: A Case Study of Jin Guan Tong Li Company (JGTL)	65
6.1 The Overview of JGTL	65
6.2 JGTL's Development	66
6.2.1 Stage One: the Entrepreneurial Period: 1998 – 2001.....	66
6.2.2 Development Stage (2001-2010)	68
6.3 The Impact of the Driving Forces on Strategic Innovation.....	71
6.3.1 The Impact of Strategic Flexibility on Strategic Innovation.....	71
6.3.2 The Impact of Competitiveness on Strategic Innovation	72
6.3.3 The Impact of Business Performance on Strategic Innovation	72
6.3.4 The Impact of Supply Chain on Strategic Innovation.....	73
6.3.5 The Impact of Market Competition on Strategic Innovation	74
6.3.6 Enterprise Cooperation and Strategic Innovation	74
Chapter 7: Conclusions	77
7.1 Conclusions	77
7.2 Limitations	78
7.3 Suggestions for Further Studies	78
Bibliography.....	81
Appendix I Questionnaires.....	87

List of Tables

Table 3- 1 The hypotheses of the driving force mechanisms for strategic innovation	34
Table 3- 2 The hypotheses of the mechanism model	37
Table 5- 1 Basic information of the enterprises surveyed.....	44
Table 5- 2 The exploratory factor analysis and reliability test result of the scale of the factors influencing strategic innovation	46
Table 5- 3 The model fit of confirmatory factor analysis of the factors influencing strategic innovation.....	49
Table 5- 4 The exploratory factor analysis of strategic Innovation scale and the reliability test	50
Table 5- 5 Strategic Innovation confirmatory factor analysis model fit results.....	52
Table 5- 6 Table 5-6 the result of descriptive statistics.....	53
Table 5- 7 The correlation analysis of main variables	54
Table 5- 8 the test results of the corrected model of mixed path	56
Table 5- 9 the test results of the corrected model of mixed path	57
Table 5- 10 the empirical results of the corrected mixed model.....	58

List of Figures

Figure 3- 1 Mechanism model of the driving forces influencing strategic innovation	36
Figure 5- 1 the model of confirmatory factor analysis of the six factors influencing strategic innovation.....	48
Figure 5- 2 the model of the confirmatory factor analysis of the three strategic innovation factors.....	51
Figure 5- 3 Initial structural equation model.....	55
Figure 5- 4 The operational result of the corrected model	55
Figure 5- 5 The operational result of the initial mixed path model.....	56
Figure 5- 6 The operational result of the corrected model of mixed path.....	57

Chapter 1: Introduction

This Chapter is the introduction, dealing with research background, presenting research questions and research significance. It describes the contribution as well as the outline of the thesis.

1.1 Research background and Significance

1.1.1 Research background

Since the late 20th century, the emergence of economic globalization and knowledge economy has led to a dramatic change in the management field and the booming of management innovation has resulted in a great reform of corporation environment (Peter, 1988), which involves all aspects from daily management to business strategy and again business strategy has become a primary issue. The competition theory is shifting from the positioning theory (advocating adapting to the environment) to core competence theory (focusing on core competence).

Innovation is a behavior that consists in improving or creating new things, ways, methods, elements or environments with existing knowledge and materials, aiming at meeting social needs and bringing benefits (Wu Huaiyu, 2012). Innovation is an action of seeking opportunities and innovative enterprises tend to create fortune through their innovation, being proactive and having the courage to take risks (Barringer, 1999). Innovation in an enterprise is a combination of technology, management and clients and it is a process where all these elements fit into each other. It is composed of three steps (a) the emergence of innovation, (b) implementation and (c) application (Wang Maoxiang, 2014).

Enterprise innovation is practiced under the guidance of enterprise strategies with an aim of adapting to the changes in the environment and meeting the needs of clients (Wang Maoxiang, 2014). Therefore, the management of innovation needs to be connected with strategic management. Strategic management is an action of seeking for advantages, including industrial positioning, developing special resources and core competencies, and participating in unique industrial networks (Barney, 1991; Dyer, 1998). Hence, enterprise innovation and strategic management can overlap in some enterprise activities and they both focus on how to

seize the opportunities brought by environmental changes. Strategic innovation is an integrated concept, where innovation is seen from the perspective of strategy while strategic behavior is decided by innovation (Wang Wei, 2009). All these are built up on the foundation and core competence, i.e., how companies can seize the opportunities brought by environmental changes.

The theory of core competence (Hamel & Prahalad, 1990) suggests that core competences are the source of competitiveness for enterprises and can bring advantages to a company over its competitors in terms of resources and capabilities (Ye Xiaoling, 2003). This theory should be applied to corporate strategic activities and a company's strategies need to focus on nurturing and strengthening its core competences (Li Ye et al., 2005). To sum up, the objective and purpose of strategic innovation is to upgrade an enterprise's core competence so as to enable it to maintain its stability and obtain stable profits. It is also an enterprise self-organization ability to combine technological assets, operation mechanisms and the outcome of enterprise implementation of internal management strategy and external trade strategy.

In the field of production, how do enterprises achieve strategic innovation to maintain their core competence? Due to the booming of IT industry and IT technology being widely spread in recent years, IT technology has penetrated various aspects of social life and other industries. Along with the development of high-tech, the number and strength of Chinese IT companies is increasing day by day, which has led to fierce competition for market share. Meanwhile, the accession to the WTO in December 2001 has involved China more in international economic affairs and the great market potential of IT industry attracted international IT companies to participate in the competition. The joining of powerful international competitors has had a great impact on Chinese IT companies. To maintain sustainable development and survive the fierce competition, Chinese IT enterprises have to achieve development and keep core competitive advantage through constant innovation. Based on the difference of business, Chinese IT enterprises are divided into two types – technology companies and trading companies. Therefore, the innovation of IT companies should cover not only technology innovation but also innovation in capital operation, market positioning, marketing methods selection and corporate internal management.

IT trading enterprises have to address more complicated issues, such as a competitive environment, confrontation in competition, ways of competition and how to maintain competitive advantages, all of which could have impact on IT trading enterprises and may

sometimes hinder their sustainable development. In recent years, the downturn of financial markets has also affected IT trading enterprises, especially the small and medium-sized ones. Although some of the IT trading enterprises are currently developing well and are profitable, they are not assured of prosperity in the future. Many issues that are strategically significant to trading IT enterprises, such as how to stay profitable, how to maintain market share, how to cope with the competition against other IT trading enterprises or the enterprises of alternative products, need to be addressed as soon as possible. To win out in the fierce competition in the market, trading IT companies must obtain sustainable core competence to maintain sustainable development.

The source of core competence of an enterprise is constant innovation in technology and strategy to seek for opportunities in the changing market. How can enterprises foster sustainable competitive advantages? What factors are influencing core competitive advantages? How do these factors influence core competitive advantages? These issues are the topics of common interest among strategic innovation researchers and are also the focus of this study.

1.1.2 The significance of the research

Currently, strategic innovation has become a major task for many IT trading enterprises due to the uncertainty of the market environment. Hence, this thesis focuses on strategic innovation, exploring how IT trading enterprises achieve strategic innovation and how they obtain core competences that can sustain the growth of the enterprises.

The study of core competence based on strategic innovation is quite a new topic and it is a combination of strategic management and organization innovation, which can be used as guidance for the practice of the strategic innovation in IT enterprises. The significance of this study includes:

(1) Strategic Innovation is an important research topic in strategic management, and has attracted substantial attention in recent years. Based on a comprehensive literature review, this thesis will analyze the means of achieving strategic innovation in IT companies through identified driving forces. The study aims at not only enriching the theoretical research of strategic management and innovation but also at further exploring the combination of strategic management and innovation management.

(2) With domestic enterprises integrating into the international market, China's IT industry is faced with both challenges and opportunities. In this situation, IT trading

companies need to work on strategic innovation. This study will analyze new driving force mechanisms for strategic innovation and provide IT trading enterprises with a workable strategy for growth.

1.2 Research Questions

Many weaknesses can be identified in the strategies of IT trading companies, reflected for example on the uncertainty of the prospect market, insufficient capacity on the internal management, serious brain drain and the lack of core competence. These weaknesses have hindered companies from realizing their strategic goals and have also trapped them in a dilemma where no effective innovation can be made. Therefore, how do IT trading enterprises decide on the direction and timing of strategic innovation? How do they obtain core competence for sustainable development through taking advantage of strategic innovation? To explore these issues, this thesis has reviewed and analyzed the existing literature. In order to solve the key problems we will explore the following specific areas:

- (1) What are the factors influencing corporate strategic innovation? How do they work?
- (2) How do IT trading enterprises seize the opportunities of strategic innovation, lower the risks of enterprise strategies, and assure the implementation of strategic innovation to improve their competitive advantage?

1.3 Research Methodology and the Originality of the Research

1.3.1 Research methodology

This thesis reviews the literature on strategic management theory, innovation theory and strategic innovation studies and explores the factors influencing strategic innovation to construct a conceptual model. Our subjects are IT trading companies and a survey is conducted through questionnaires and a case study is carried out on the basis of an extensive literature review. The research methods employed in this study are described as follows:

- (a) Literature review.

Through reviewing literature on strategic management theory, innovation theory and strategic innovation, this thesis has studied the driving forces of strategic and business model innovation, organizational innovation and supply chain management. A conceptual model is

finally built up to demonstrate the relationship between the driving forces and strategic innovation.

(b) Questionnaire survey: The subjects of this study are IT trading enterprises and the survey was conducted from March 2014 to June 2014. For the sake of convenience, the data were collected in Sichuan province. All the 191 questionnaires distributed were recovered. Except for invalid questionnaires, the actual returned questionnaires are 176 with a returning rate of 92.15%.

(c) Case study: In this thesis, a case study of Jin Guan Tong Li (JGTL) Company was conducted. Single case study is aimed at tracking the new issues that emerge in management practice (Zhou Changhui, 2005). Through the case study, the in-depth analysis of the issues raised in the research framework can be tested and effective advice will be suggested. This study has closely observed the rules and methods of conducting a case study (Andrew, 1990 ; Eisenhardt, 1989) and has followed the steps proposed by Andrew (1990), that is, JGTL Company was analyzed after theoretical research.

1.3.2 The contribution of the research

The contribution of the research is demonstrated in the following aspects:

(a) This study focuses on strategic innovation while involving the theory of strategic management and innovation. It presents a conceptual model of the relationship between the driving forces of innovation and strategic innovation and might contribute to research particularly in Sichuan province, China, and to the literature in this field.

(b) The subjects of the study are IT trading enterprises in Sichuan province, China. Sichuan province is not as economically developed as Beijing or Shanghai, so the companies in this province are not often selected as samples in the research of IT trading companies. By doing this, the thesis may be beneficial to the development of IT service industry in the region.

1.4 The Outline of This Thesis

This thesis covers literature review, theoretical exploration and empirical study. In the literature review, the theories of strategic management and innovation are discussed and the rationale for this research is identified. In the theoretical research, it is proposed that the scale dimension for strategy innovation is business model innovation, organization innovation and

supply chain innovation, from which the driving forces of strategic innovation are identified and a model of driving forces mechanism for strategic innovation is constructed. In the empirical study, a survey is conducted through questionnaires to validate the conceptual model of the relationship between strategic innovation and its driving forces. This model is tested through the case study.

There are six chapters in this thesis:

Chapter 1 is the introduction, dealing with research background, presenting research questions and research significance. It describes the contribution as well as the outline of the thesis.

Chapter 2 deals with literature review. It reviews the relevant studies of strategic management and innovation, discussing their contributions to the research of strategic innovation as well as their shortcomings. This chapter also covers the concepts of enterprise strategy, strategic management and the development of strategic management and innovation theory, including the meaning of strategic innovation, driving force for strategic innovation and the scale dimension for strategic innovation.

Chapter 3 focuses on hypotheses and research model. Through analyzing the factors influencing the driving forces of strategic innovation and studying the relationship between each variable, this chapter studies the factors influencing strategic innovation. The hypotheses and research framework are also proposed.

Chapter 4 deals with the methods to collecting data, explaining the design of the questionnaire, the sample and the use of the case study as a research method. Data collection and data processing methods are also discussed in this chapter.

Chapter 5 verifies the hypotheses of the study, this chapter elaborates on the design of the questionnaire and sample. This chapter will also analyze each variable as well as the empirical study and the descriptive statistical analysis, correlation analysis and the results.

Chapter 6, a case study of JGTL is introduced. This chapter deals with the origin of the company, the development and the bottlenecks of its development. Then, the results of the empirical study are interpreted through this case.

Chapter 7 is about the conclusion and implications. This chapter deals with the conclusion of this research and its contribution to the theoretical research of strategy innovation and implications for management. The limitations of this research and suggestions for further study are also stated in this chapter.

Chapter 2: Literature Review

The study of strategic innovation needs to combine the views of innovation with strategic views (Hitt et al., 2001). Therefore, it is necessary to first review the theories of strategic management and innovation and then study strategic innovation in order to lay a theoretical foundation for the research.

2.1 Strategic Management Theory

2.1.1 Enterprise Strategy Concept

Many scholars have studied the concept of enterprise strategy. In 1956, Ansoff proposed that strategy combined the business activities, products and market together. His theory mainly involves products and market scope, enterprise growth, competition approaches and mutual collaborations. In 1962, Chandler argued that strategy was a decision to set a long-term goal of the firm, an approach to achieve these objectives and allocation of resources. In 1971, Andrews suggested that strategy is a goal, a purpose and the main policies and plans to achieve that purpose. The definition refers to the industry in which the enterprise operates or to the future industry it will enter as well as to the current business of the enterprise and its future business.

In addition, Mintzberg (2002) developed five different definitions of strategy. First, strategy as a plan: it emphasizes that the managerial personnel of firms must have conscious leadership to make planning before execution. Second, strategy as a pattern: it emphasizes on actions; otherwise, it is just fantasy. Strategy can also be spontaneously generated. Third, strategy as a ploy: it emphasizes that strategy is a means to threat, or defeat competitors in order to achieve the desired competition purposes. Fourth, strategy as a position: it emphasizes that enterprises should adapt to the external environment and create conditions for better business competition or cooperation. Fifth, strategy as a perspective: it emphasizes on the collective consciousness of the strategy process, requiring members to share strategic

concepts to form concerted action. In summary, corporate strategy can be defined as a series of overall, fundamental and long-term plans that enterprises develop to outperform their competitors and compete for customers and markets in a highly developed market economy.

According to the above definition, corporate strategy is by nature a concept of plan, which is composed of certain strategic goals and a series of predetermined strategic measures to achieve the strategic goals. In the same time, it is also a plan for competition by which a firm can adapt to the environment and outperform the competition. Therefore, corporate strategy needs not only to consider its own survival and development, but also take the initiative to meet the challenges of environmental change and compete against its competitors to make constant adjustment and improvement.

Based on the understanding of the concept of enterprise strategy, we will further explore the concept of strategic management in the next section.

2.1.2 Strategic Management Concept

In his book *Corporate Strategy Concept* published in 1960, Kennedy R. Andrews from Harvard Business School first discussed the issue of corporate strategic thinking. He proposed a two-stage strategic management model involving formulation and implementation of corporate strategy and defined strategy as a match between organizational strength and weakness and opportunity and threat of environment. Based on the view of matching strength and weakness with external environment, Zhou (2002) made a further study and proposed an analytical framework to identify strengths, weaknesses, opportunities and threats of enterprises. The framework can be employed to formulate enterprise strategy by connecting enterprise strategy and internal resources and external environment. In 1972, Ansoff published his paper *Strategic Management Thinking* in the journal of *Business Policy*, which formally proposed the concept of strategic management. In his book *Strategic Management Theory*, Ansoff pointed out that corporate strategic management referred to a series of business management activities combining daily business decisions with long-term planning decisions. In 1982, Steiner argued that corporate strategic management was to determine the corporate mission and business objectives through auditing the external environment and internal business factors. It is a dynamic process to ensure that the missions and objectives be implemented and achieved. The essence of his views was included in his book *Corporate Policy and Strategy*.

The academic research on theory of strategy in China started to boom in 1980s. During this period, a large amount of research work and theorists of strategic management appeared and, at the same time, the learning of strategic management theories has become the core curriculum of many universities in China. In 1990s, a new generation of strategic management scholars started to teach western strategy theories and applied them to the Chinese context to develop their own theoretical framework on strategic management. By systematically examining the strategies adopted by well-known Chinese enterprises, Kang (2001) conducted a high-level summary about the experience of the enterprises success as well as the lessons from their failure in terms of their growth, competition and international businesses. On this basis, he also worked out some innovative theories, such as concept of “strategy map of enterprise”, “law of large numbers”, “the reverse relationship between business diversification of enterprise and development level of market”, “leverage principle for successful diversification” and other theories, which made a contribution to the theory of strategic management. Compared with the western scholars, Chinese scholars put more emphasis on the Chinese context while studying strategic management, so the studies are more conducive to the practices of Chinese enterprises.

In short, this study concludes that strategic management is a task that managers assume to formulate strategy for organizations. It is a dynamic process composed of six steps: recognition of an organization’s mission, objective and strategy, analysis of internal and external environment of an organization, strategy formulation, implementation and evaluation of outcomes.

2.1.3 Theory of Strategic Management

Since mid-1950s the study of strategic management theory has gone through three phases: booming, declining and revitalizing phases. In early 20th century, the focus of enterprise management was the deviation control and complexity management. In the 1950s, the studies focused on forecast and complexity management. In the 1960s, the focus of management studies was strategic promotion and capacity change. Since mid-1970s, the focus has turned to emergent strategy change and timely response. The management style also varied in each phase. In the beginning of 20th century, the main concern of the management style was budget control. In 1950s, the management form evolved to long-term planning and in the 1960s to strategic planning. Since mid-1970s, the management form started to turn to strategic management. In each phase, the studies focused on different specific contents as it

will be detailed below:

(1) The school of strategic planning represented by Andrews and Ansoff in 1960s: The core issue of strategic planning is to achieve optimal allocation of corporate resources, that is to say, in order to achieve higher return on investment the enterprise uses its resources to match external market opportunities to forge a unique competitive advantage and obtain long-term profitability. Those responsible for laying the basis for strategic planning are Andrews (1971) and Ansoff (1965) who specifically illustrated the role of strategic planning in the development of organizations. They argued that strategic planning is a sequence of structured actions to achieve the scheduled tasks and planned objectives. By analyzing the changing external environment and taking advantage of its own resources and technology, the enterprise can control the results of actions. So, strategic planning is a goal-oriented behavior.

(2) In the 1970s, a new school of “Adaptation to Environment” emerged following the criticism on the “Planning School”. According to this school, enterprises and environment are interrelated and interwoven and the environment plays a central role in the process of strategy formulation. As the external environment is beyond the control of enterprises, they have to constantly adapt to the changes of environment. Adaptation to the environment is a focus of corporate strategy and has an important impact on the survival and development of enterprises. The school argued that the external environment is dynamic, open and unpredictable. So, the impact of the environment uncertainty on business became the main issue of strategy studies. It is proposed that organizational development depends on the environment and organizations need constantly to adjust its own strategy with the changes of external environment. The scholars of this school argued that external environment mainly affects competitive advantage of an enterprise and internal environment had little impact on the competitive advantage. In addition, borrowing from Darwin’s theory, the school proposed that strategy is a dynamic path - dependent model, allowing the possible random deviations and choices of intra-enterprises and inter-enterprises (Wang Tao et al., 2002).

(3) In the 1980s, studies mainly dealt with the theory of dynamic strategic management and the representative scholar is Michael Porter (1997) who proposed the industry organization theory. According to Porter, the industry organization theory was different from the previous strategic management theory as the latter argued that enterprise performance was determined by integrated decisions of enterprise strategy formulation, implementation and control while the former theory focused on the characteristics of the industry where the enterprise operated and the relative competitive position within the industry. According to the

theory of industry organization, the characteristics of the industry in which the enterprise operates are the starting point for formulating strategy and the competition in different industries decide the strategy, development and performance of enterprises. Therefore, the market structure plays a decisive role in enterprises' market behavior and performance.

(4) In the middle and late 1980s, the resource-based view became the core study of strategic management and the representative scholars are Wernerfelt (1984) and Prahalad (1995). The resource-based strategic view holds that firms need to identify the unique resources that can produce sustainable competitive advantage from inside of companies rather than from the external markets. This requires the managers to focus on their own key resources, which are heterogeneous, difficult to imitate, and high efficient and advises them to make corporate strategic decisions from the perspective of resources and capabilities. The central argument of the resource-based strategic view is that the source of competitive advantage of enterprises is the strategic resources under control of enterprises. Due to the heterogeneous nature of strategic resources (including knowledge and technology) accumulated by some enterprises, they can obtain the competitive advantage through these strategic resources which other enterprise may lack. In addition, these resources cannot completely flow among enterprises. As unique resources of the enterprise, which other companies cannot imitate or purchase, heterogeneity of the resources remains and thus the competitive advantage sustains. The basic paradigm of the theory can include the following steps: analysis of internal resources of enterprises; formulation and implementation of strategy; accumulation of core competencies of strategic resources to gain competitive advantage and achievement of business performance. Therefore, the resource-based view requires that firms rely on their own unique resources to engage in the businesses for which they have comparative advantages in their industries or related industries and avoid the excessive attractiveness of the industry going blindly into the non-related industry for the business diversification.

Resource-based view suggests that enterprise resources are heterogeneous and that the formation of resources is separated from the historical path of the enterprise. Essentially, enterprises can get the resources from the market. However, due to the unclear relationship between obtaining long-term competitive advantage and most of the corporate resources, some other scholars have raised another view stating that the resources deciding the competition of enterprises are normally those accumulated and formed within the enterprise and the resources are usually not traded. The unique and inimitable capability that

organizations obtain through the long process of learning is the source of competitive advantage, thereby resulting in a “capability-based view” theory.

In 1990, Prahalad and Hamel proposed the concept of core competence and a capability-based competition paradigm, a new framework of competitive strategy combining core competence and strategic management. The capability-based view includes the following main points. Firstly, core competences of enterprises are the basis of forming dynamic competitive advantage; secondly, core competences enable enterprises to enter a variety of relevant markets to participate in the competitions; thirdly, core competences are difficult for competitors to imitate so enterprises can achieve the superior value than the competitors, which is the source of long-term profit of enterprises. Here, the word “core competency” refers to the unique capabilities, e.g., collective learning, research and development, and innovation. As the most functional part among various capacities of enterprises, core competence can affect the functioning of other capabilities by means of external radiation. Therefore, it plays a key role in the formation of market competitive advantage. In short, the capability-based view focuses on long-term sustainable development of enterprises by acquiring competitive advantage and realizing higher competitive values (Teece et. al, 1997).

(5) In the 1990s, a new eco-strategic management theory emerged and its representative scholar is James F. Moore (1995). He argued that an enterprise was not a single entity separated from the whole industry but existed as a member in a complete ecosystem. The ecosystem includes stakeholders such as producers, competitors, suppliers, customers, and shareholders. In today’s world market featuring globalization and fierce competition, the boundary among industries is becoming more and more blurred and interdependence among the ecosystem members is increasing. The resources of the ecosystem can become the source of competitive advantages of an enterprise. Therefore, the integration capability of enterprises and the support of ecosystem have become a force to guarantee core competences for enterprises.

The emergence of these new strategic theories signifies that the guiding ideology in this period has undergone a major breakthrough in strategic management and the paradigm of strategic management is changing. Enterprises should create and obtain value through innovation, creativity, and cooperation. A new thinking trend beyond competition theory is forming and has gradually achieved the dominance of strategic management theory. This new strategic concept requires enterprises to focus on the accumulation of their core competencies and on weighing equally cooperation and competition rather than just focus on the product or

competition as a single entity.

Following the brief introduction of strategic management, the next section will review the innovation theory.

2.2 Innovation Theory

The study about innovation theory can be dated back to as early as in 1934 when Austrian-American economist Joseph Schumpeter published the book *The Theory of Economic Development*. Schumpeter's innovation theory includes the contents of innovation, innovation and entrepreneurship, innovation and the development cycle of the capitalist economy. Following Schumpeter's innovation theory there have been two different directions in the development of the theory. One direction is about the technological innovation that mainly involves the technology promotion, diffusion and transfer as well as an in-depth study into the relationship between technological innovation and market structure. The other direction is about the institutional innovation that combines Schumpeter's "Innovation Theory" with the institution of the institutional school to study the relationship between institutional change and economic efficiency of enterprises. In this section, we will mainly introduce the concepts of innovation, the relevant theories of technological innovation and institutional innovation.

2.2.1 Concept of Innovation

According to Schumpeter's views in his book "The Theory of Economic Development Theory" in 1934, the reconfiguration of production factors is a process of innovation, for which entrepreneurs are the executors. The reconfiguration refers to introducing the unprocessed elements and conditions into production to form new production process in order to obtain potential benefits. This reconfiguration falls into the category of economy rather than technology. In addition, in a later book published in 1947, Schumpeter further argued that innovation does not necessarily create the completion of new things, but it highlights the reconfiguration of production elements including introduction of new products, adoption of new process, expansion of new markets, obtaining new materials (raw materials) and implementation of new organization forms.

Following Schumpeter's theory, many scholars made various interpretations and

definitions about innovation, based on different background and perspectives. For example, Mansfield (1984) argued that innovation was the first application of invention. The OECD (Organization for Economic Cooperation and Development, 1997) defined that the commercial use of invention is innovation. Based on an organizational perspective, West and Farr (1990) proposed that innovation exists in the organization and is a process by which individuals, teams and organizations consciously introduce new concepts, processes, and products to facilitate the development of organizations.

By summarizing the definitions of innovations proposed by the major scholars, we suggest that innovation refers to the process to introduce new ideas, technologies, products, and various forms of production factors in order to achieve sustainable development of the organization. The purpose of innovation is to achieve the potential market benefits and enhance the competitive advantage of organizations. In short, the new process that benefits the organization is an innovation.

In the next section, we will highlight the concepts of technological and institutional innovation.

2.2.2 Technological and Institutional Innovation

(1) Technological Innovation

In 1982, the British scholar Freeman C. defined that technological innovation referred to the commercialization of new products, new processes, new systems and new services for the first time. In 1985, the Japanese scholar Morishima proposed that technological innovation is not a technical invention, but rather is an innovation through technology which itself does not require a revolutionary change. In turn, the Organization of Economic Cooperation and Development (OECD, 1993) stated that technological innovations include new products, new processes and the significant changes in existing products and processes.

The Chinese scholar, Fu Jiaji (1998) made a comparative study between technological innovation and invention and concluded that technological invention is a behavior of science and technology while technological innovation is an economic behavior. He argued that by reconfiguring organizational factors enterprises can conduct technological innovation to achieve market benefits and set up more efficient and cost effective production and business systems by promoting new products and processes. The systems can help enterprises to obtain

potential market shares or raw materials, which includes a series of activities such as business, finance, science and technology and others.

To summarize the related theories, this study suggests that technological innovation is an approach that an enterprise uses to improve its core competence and realize its market value by applying new production and management models, new knowledge, technology and processes.

(2) Institutional Innovation

Institutions are governed by culture and ideology, but an institution does not mean culture itself. An institution is composed of a system of rules. No institutions are perfect. There is always a certain degree of complementarities between different institutions. Limitations of institutions can make the institutions outdated in face of constantly changing realities though institutions have ever promoted or are promoting social development. Therefore, an institution itself has an issue of development and needs for institutional innovation. The school of studying institutional innovation has appeared.

The concept of institutional innovation is derived from the field of institutional economics, which was proposed by North as the representatives of the new institutional economists. In 1995, North pointed out that the factors that impact economic growth include institutional innovation. He used the modern property rights theory to explain the relationship between institutional innovation and economic growth and suggested an institution as a variable of economic growth. With this theoretical proposal, researchers started to attach importance to the study on institutional innovation and use it for institutional innovation in all kinds of organizations. The motivation for institutional innovation lies in that the implementation of the new institutions could bring the expected benefits. Once the expected benefits are greater than the resistance of institutional innovation and the expenses arising from the innovation, the beneficiaries of institutional innovation will make the efforts to promote and implement the innovation; otherwise, they will maintain the old institutions. Li (2001) pointed out that institutional innovation takes place when human beings constantly correct or strengthen the old institutions under the new environmental changes and it is also a continuous process of the new experiences responding to the old institutions.

Therefore, we suggest that institutional innovation is a dynamic process of redesigning and changing institutions to bring some social and economic benefits to organizations. Combining the related theories of strategic management and innovation, this study will review the literature of strategic innovation to lay a foundation for the further research.

2.3 Strategic Innovation

2.3.1 The Concept of Strategic Innovation

Scholars explain the concept of strategic innovation from different perspectives. This study analyzes and summarizes the definition of strategic innovation from the perspectives of organizations, business models and supply chains.

(1) The organizational perspective

Mintzberg and Westley (1992) argued that when the contents of organizational innovation involves directional organizational elements, such as vision at the level of abstract thinking, positioning and procedures, and facilities at the level of specific behaviors, then the innovation is the strategic innovation of enterprise. Nandini and Gretchen (1996) suggested that strategic innovation is a transformation in terms of form, nature and state to deal with the external environment change for the sustainable growth of enterprise. This kind of innovation contains two meanings. First, the contents of corporate strategic innovation are made of the changes in scope of enterprise, resource allocation, competitive advantage and coordination; second, the external environmental changes cause the organizational innovation so, strategic innovation contains organizational innovation.

(2) The perspective of business model

Hamel (1998) argued that strategic innovation is a reconstruction of the existing industry to create new value for customers as well as new wealth for all shareholders. Corporate strategic innovation is a source of competitive advantage and the only way for the new entrants to succeed in face of enormous resource disadvantage. Kim and Mauborgne (1999) suggested that companies should not only rely on technological innovation to gain competitive advantage but rather continually create new value for customers to seek the source of differentiation, which is a behavior of strategic innovation. Markides (1997, 1998) proposed that corporate strategic innovation is an ability to reconsider the business model to create value for clients and accurately identify the difference between a firm's own operation model and its competitors' to create its competitiveness by taking advantage of the difference. Tang (2001) argued that strategic innovation is a new strategic positioning, which reflects a new direction of value creation. Different strategic positions of an enterprise will make the business model of one enterprise different from others within the industry. Therefore, business model and corporate strategy are the two sides of one issue. Business model can more

accurately reflect the way of value creation and the relationship between sellers and buyers. Ding et al., (2009) also argued that a new business model can be seen as a strategic innovation. In a word, strategic innovation is an innovation of strategic positioning as well as an innovation of business model. Business model innovation is included in strategic innovation.

(3) The perspective of supply chain management

Strategic innovation is an integrated perspective of strategic management and innovation, which uses a strategic thinking to determine strategic behavior. Its essence is to enhance the core competitiveness of enterprises (Wang Wei, 2009). Supply chain management is the source of the most fundamental and core competitiveness of an enterprise. Supply chain innovation is no longer the main task of certain parts of supply chain but the innovation of the whole supply chain system. Strategic innovation uses strategic thinking to consider an entire enterprise in order to enhance the core competitiveness of the enterprise. As an important part of competitiveness of enterprises, supply chain innovation belongs to the category of strategic innovation.

Based on previous research viewpoints, this study puts forward a definition of strategic innovation. We suggest that strategic innovation is to nurture and develop the core competencies of enterprises by means of organizational innovation, business model innovation and supply chain innovation and to capture and use existing or potential opportunities to improve the operational performances and competitive advantages. As for strategic innovation, this study uses organizational innovation, business model innovation and supply chain innovation for specific analysis.

2.3.2 The Driving Forces of Strategic Innovation

At the early time of proposing his innovation theory, Schumpeter pointed out that the driving forces behind innovation came from the pursuit of excessive profits by enterprises and entrepreneurship. Until now, the idea has been the theoretical basis of the study on the driving forces of innovation. In addition, Huff and Thomas (1992) pointed out that occurrence of any act is the result of the interaction of actors and environmental factors. According to Rajagopalan (1996), strategic innovation of an enterprise is caused both by the internal environment of the enterprise and its external environment. Therefore, this study attributes the driving forces of strategic innovation to the internal driving forces and external driving forces of an enterprise.

(1) The internal driving forces

Xiang Gang, et al., (2004) found that the internal driving forces of continuous innovation of enterprises were the innovation awareness of entrepreneurs and employees and interest driven power from innovation. Luo Ling and Diao Zhaofeng (2007) suggested that the internal forces for strategic innovation include five elements: innovation awareness of entrepreneurs and employees, innovation spirit, interest driven power from innovation, corporate innovation culture and teamwork of enterprise. The implementation of strategic innovation is mainly determined by the cognition of innovators about the value of innovation and estimation of innovation success. If innovators recognize the great benefits of successful innovations and the bigger chances for the success, the motivation for innovation will be much stronger.

The internal forces driving strategic innovation come from the pursuit of maximum profit by entrepreneurs. In order to maintain the innovation forces, it is necessary to connect the development of an enterprise with the interests of entrepreneurs and employees of the enterprise.

The business performance of an enterprise is closely linked to the essential interests of its entrepreneurs and employees. In the time of good business performance, entrepreneurs and employees can get more essential benefits and are keen to make more efforts to contribute to the strategic innovation for more benefits. While in the time of bad business performance, the interests of entrepreneurs and employees can be damaged. Given this situation, entrepreneurs and employees may also devote themselves to the strategic innovation to improve the status quo.

It becomes the consensus of enterprises to obtain competitive advantages. The key lies in whether an enterprise owns its competitive capability. As the basis of obtaining competitive advantages, the competitive capability is composed of several key competences, namely technological competence, marketing and integration competence. When an enterprise has a better competition capability, it can take initiative to implement strategic innovation to maintain its competitive advantage. While an enterprise has a weak competitiveness, it can also develop its differentiated competitive advantage by means of strategic innovation to increase its competitiveness.

Strategic flexibility is a kind of capability that an organization has to achieve its strategic objectives. It involves the interaction between internal and external environments of an organization and the capability to quickly respond to the changes of the environment. This kind of capability is largely associated with the innovation awareness of an enterprise. If an

enterprise lacks the awareness to innovate and its employees confront with the uncontrolled strategy, it cannot make a quick response to the environmental changes and fails to achieve its strategic goal. Therefore, the enterprises with strong strategic flexibility have relatively outstanding innovation capability and are more willing to implement strategic innovation.

In short, business performance, competitive capability and strategic flexibility can promote enterprises to carry out strategic innovation. So, this study concludes that the internal driving forces for strategic innovation involve business performance, competitive capability and strategic flexibility. The three internal driving forces will be elaborated as follows:

(a) Business performance

No agreement on the definition of business performance has been reached. In terms of institutions, Agarwal et al. (2009) suggest that performance can be divided into quantitative performance and qualitative performance. Quantitative performance means that performance is measured by financial status or market, such as asset utilization, yield or market share; qualitative performance is measured by service quality, customer satisfaction and employee satisfaction. Some scholars believe that performance is a concept of values, summarizing the production and business activities of a company and is mainly related to corporate finance, asset management and development capabilities. However, Szilagyi (1984) suggested that performance is a holistic concept that can represent the final outcome of the operation of an organization, and the two components of performance are efficiency and effectiveness, compared with the performance. As can be seen, an organization's business performance can be defined from different perspectives.

In this study, qualitative assessment of performance is adopted and the study focuses on the company's performance against its competitors in terms of the sales increase, market share, and business scope. We adopt qualitative assessment approach, because the data of the private companies are not often accessible. Besides, according to Miller (1996), quantitative data is often impacted by relevant factors so the research results based on quantitative data could be sometimes misleading.

(b) Core competence

After the definition of core competence was proposed, many scholars have studied it from different perspectives and till now no definition of core competence has been universally accepted.

Lewis and Michael (2005) discussed the evolution of the concept of core competence.

Mooney and Ann (2007) defined core competence, competitive features and competitive advantages and proposed a conceptual model of competence.

In the studies of core competence, Chinese researchers focused on quantifying competence and expanding the features and connotation of core competence. They analyze the components of core competence from different perspectives and have constructed the appraisal index system. Wei Jiang and Ye Xuefeng (2001) assess the technological capacity of a company in terms of human resource, information, equipment, and organization through fuzzy assessment approach. Shi Xijie and Wu Yuhua (2004) analyze the connotation of core competence of a company in three layers: market performance (external layer), technological competence or service level (middle layer) and management (internal layer) and have proposed three-dimension assessment model to analyze the core competence of an enterprise. Du Gang et al. (2005) have explored core competence of a company in three dimensions: market, technology, and management. Based on questionnaire, they worked out the scores of the core competence respectively in three dimensions as well as the overall scores of the core competence.

From the review of the definition discussed above, we find that core competence refers to the knowledge and capability possessed by a company, including the ability of locating market, and identifying market opportunities, the capability of integrating internal resources, conducting technological innovation and developing new products and the competence of keeping the competitive advantages of the company and sustain its competitive edge.

(c) Strategic flexibility

The concept of flexibility was first put forward by Ansoff (1965) and then it has been gradually accepted as strategic flexibility, which is also the norm of institutional practice (Ulrich & Wiersema, 1989). Many studies are based the research of Ansoff's. Strategic flexibility means that the organization's capability of adapting to the changeable environment, improving manufacturing technique, and coping with the uncertainty (Piore & Sabel, 1984; Aker & Mascarenhas, 1984). Some scholars suggest that strategic flexibility means choosing strategies freely, which can enhance the company's capability of controlling the changeable environment. It is an effective way to deal with changes. Sanchez (1995) articulates that strategic flexibility means that an organization satisfies different needs in a changeable competitive environment. Harrigan (2001) believes that flexible organization can obtain more profits because it is more capable of dealing with uncertainty. Therefore, he states that strategic flexibility refers to an organization's ability of relocating itself in the market and

adapting its strategies (Harrigan, 1985). Hitt et al. (1998) considers strategic flexibility as the most critical factor for the organization to survive the highly competitive environment. He defines strategic flexibility as the ability to respond rapidly to the changes in the organization to obtain the competitive advantage. "An organization can control the unpredictability of the market through strategic flexibility, and convert the flexibility into the organization's core competence" (Abbott & Banerji, 2003).

Johnson et al. (2003) claim that resource-based strategic flexibility can improve the performance of the enterprise through market flexibility. Sanchez (1995) distinguishes the resource flexibility and coordinative flexibility. The development of strategic flexibility in the market needs the dynamic capacity of the company (Matthyssens, Pauwels, & Vandenbempt, 2005). Evolving from the resource-based theory, Fredericks (2005) suggests that "Resource flexibility and coordinative flexibility enable enterprises to respond to environmental changes." From the perspective of the development of strategic flexibility, Volberda (1996) states that strategic flexibility enables enterprises to gain competitive advantages from the changing environment.

In summary, the study suggests that strategic flexibility means an organization can identify the changes in the environment and utilize the resources to respond to the changes in the internal and external environment and can make use of its resources flexibly.

(2) The external driving forces

Xiang (2004) also argued that the external driving forces for innovation include technology push, market demand, government initiation, and technological trajectory promotion, social, economic, and technological factors. Ouyang (2004) suggested that the external forces include demand-pull, technology push, governmental influence and market competitiveness. The external forces of corporate strategic innovation are mainly stimulated by the external environment, including commercial pressures, government influence and market competitiveness, among which the most basic and direct force is the commercial pressure.

In the process where product or service is constantly commercialized, customers can make firms compete with each other to obtain lower prices. When market prices tend to stabilize, the price will be lower than the costs of business or keep the same level of the costs. This has resulted in corporate investment income lower than the cost of investment, which harms the vital interests of enterprises. On the contrary, if an enterprise conducts a strategic innovation to increase the differentiation of products or services it will become the customer's

first choice in the market and enjoys a stronger pricing power. Thus, it will obtain the economic returns over the cost of investment.

In terms of market competition, market needs change very fast and market systems constantly evolve with strong and complicated competitions. Strategic management is deemed as an important means to deal with the complicated market. In face of the fierce competition, enterprises have to implement strategic innovation if they want to maintain their sustainable competitive advantages and create market values. From another angle, it is the fierce market competition that promotes enterprises' strategic innovation to maintain their competitive advantages.

However, in face of fierce market competition, a single enterprise finds it very difficult to deal with on its own. More enterprises tend to form new strategic alliances to develop new markets, new products and new customers' value through cooperation. Enterprises can also work with suppliers, government and even competitors to cope with new challenges in an environment of strong competition.

In this context, enterprises can walk out of the narrow circle by transforming the previous cutthroat competition to mutually beneficial cooperation and common prosperity. But cooperation does not mean the elimination of competition. By cooperating and competing, enterprises can jointly develop to obtain a sustainable competitive edge. The cooperative enterprises can integrate the resources, have access to more opportunities, reduce the risk of developing new technologies, develop new markets and promote a more innovative generation, especially through the innovation at strategic level.

In terms of supply chain management, the cooperative enterprises can share information, risks, and benefits to a certain degree. Supply chain management highlights the strategic partnership with other enterprises for developing its core competence. To conclude, the study identifies three external driving forces of strategic innovation: market competition, supply chain management and enterprise cooperation. In the following text, the three driving forces will be elaborated.

(a) Market Competition

Market competition is the basic feature of the market economy. In market economy, enterprises compete for better market resources. Through competition, the competitive enterprises survive and thus achieve the optimal allocation of production factors. Market competition includes commodity competition, quality and ability competition, service

competition, information competition, price competition, credibility competition.

In this study, market competition mainly refers to the business competition, which is categorized in goods and services competition.

(b) Enterprise cooperation

The cooperation between enterprises can be defined from several theoretical perspectives, such as transaction cost theory, resource interdependence theory, and social transaction theory.

Transaction cost theory suggests that transactions between enterprises must be accompanied by added costs, such as the cost of finding market opportunities, the cost of negotiation, the cost of drafting contracts and overseeing the implementation of the contracts.

According to resource interdependence theory, the resources that make the competitive advantages of the company are often dynamic and are hard to be copied and learned; the companies are different from each other and differ in developing and obtaining resources. Therefore, enterprise cooperation is an effective way of achieving the interdependence between companies.

Social transaction theory proposes that partnership is for mutual benefit, which is the criterion for assessing the collaboration between enterprises.

Therefore, it can be seen that enterprises cooperation is mainly for enhancing their competitive advantages and collaborate for the purpose of mutual benefit through cooperation, so they can solve the internal problems in the market and reduce transaction costs.

(c) Supply chain management

In the emerging stage of the concept of supply chain, Stevens (1989) proposes that supply chain starts from supplying and ends at consumption, which is considered the earliest description of supply chain. In 1996, supply chain association in the US defines supply chain management as the activities for manufacturing and providing the terminal products, from the suppliers of suppliers and the customers of customers. At present, the definition of supply chain has been greatly improved. Phillip claims that supply chain management is not a nickname of supplier management but a new management strategy. It integrates different enterprise to improve the efficiency of the whole supply chain and attaches great importance to the collaboration between enterprises. Supply chain management, then, is the active management of supply chain activities to maximize customer value and achieve a sustainable competitive advantage. Supply chain activities cover everything from product development, sourcing, production, and logistics, as well as the information systems needed to coordinate

these activities. The enterprises that make up the supply chain are “linked” together through physical flows and information flows. Physical flows include transformation, movement, and storage of goods and materials. They are the most visible part of supply chain. However, just as important are information flows, they allow the various supply chain partners to coordinate their long-term plans, and to control the day-to-day flow of goods and material up and down the supply chain.

This study tends to interpret supply chain management from the perspective of strategy. Supply chain management is aimed at reaching consensus between partners and building up strategic alliance, managing the complicated relationship between customers and suppliers in order to enhance the competitiveness of the whole supply chain.

2.3.3 Measurement of Strategic Innovation

This study suggests that strategic innovation enables enterprises to nurture and develop their core competence, to seize and use real or potential opportunities, and ultimately to improve business performance through organizational innovation, business model innovation and supply chain management innovation. From the above definition, we can introduce organizational innovation, business model innovation and supply chain management innovation as the specific dimensions to measure strategic innovation. The literature about the three measurable dimensions is reviewed in the following.

(1) Organizational innovation

Organizational innovation theory combines the organization theory with the theory of innovation. The study of organizational innovation starts with its definition. The Chinese scholar, Fu (1992) pointed out that the aim of organizational innovation is to achieve the consensus of new objectives and to reconstruct the relationship among rights, liability and interests of organizational members. Chen (1994) suggested that organizational innovation is an innovation of technological portfolio forms, social organization methods and institutional supporting systems, which can influence technological innovation outcomes to reach the goal of innovation. Based on the study of service outsourcing, Liu and Chen (2008) stated that organizational innovation is an important component of enterprise innovation. He argued that service industry development plays an important part in transforming economic growth mode, optimizing economic structure and organizational innovation. Dou (1995) pointed out that organizational innovation is a process of internal adjustment to fit external environment in order to survive and develop. Foreign scholars study this topic for a broad range of

perspectives. For example, from the perspective of supply chain, Shieh (2010) integrated it with corporate culture and organizational innovation and stated that supply chain management needs to be emphasized in organizational innovation. Lee et al., (2010) mainly studied the impact of organizational innovation, noting the concentrated organizational innovation has a stronger impact than the disconnected long-term organizational innovation.

Based on the related theories developed by the scholars, we suggest that organizational innovation is a complete process by which enterprises reconstruct organizations in all aspects such as organizational personnel, structure, system and culture in order to maintain their competitive advantages and achieve the goal of survival and development.

(2) Business model innovation

By reviewing the studies of business models, we identify six perspectives on the study about business models: strategic planning, knowledge management, module restructure, cumulative progression, value system and degree of change.

Specially, from the perspective of strategic planning, Wolfle (2000), Knecht (2002) and Lewis (2005) argued that business model shares the similar functions as enterprise strategies. So, enterprises can adopt the strategic planning methods to conduct business model innovation. From the viewpoint of knowledge management, Petrovic (2001), Kasper (2000) and Osterwalder (2004) suggested that business model helps enterprises to create value by way of spreading, analyzing and storing knowledge. In terms of module restructure, Weill (2001) pointed out that, in essence, business model is a different combination of related modules, so enterprises can realize business model innovation by managing, adding and changing modules. From the perspective of cumulative progression, Morris (2003) argued that business model innovation is a process to gradually comprehend its business logics and continuously adjust its innovation model to achieve better performance. Gordijn (2002) and Osterwalder (2004) studied from the angle of value system. They pointed out that business model innovation needs enterprises to constantly integrate and change their value system. However, due to the various changes in value system, such as technological change, social environment and competition, enterprises may find it difficult to implement business model innovation. From the perspective of degree of innovation, Linder (2000) argued that the degree of business model change varies in different phases and with different enterprises. To carry out business model innovation, an enterprise needs to take into account its specific conditions to decide the innovation model in order to coordinate and direct the changes in business model.

In addition to the above six perspectives, there are some other studies on the topic. For example, Henry Chesbrough (2001) pointed out that innovation includes not only technological innovation but also business model innovation of enterprises and a good idea or technology may not be better than a good business model. Based on his view, business model, to certain degree, can become a source of competitive advantage of enterprise, which can decide success or failure of an enterprise. Paul (1998) defined business model from product, service and information flow. He identified about the source of acquiring benefits by enterprises, the potential benefits of actors in business activities and the roles and behaviors of the players of business. Paul (1998) further defined the marketing model as: first, the marketing strategy of business participants; second, business model. He suggested that business model should serve marketing strategy and the same business model can be applied to different marketing strategy.

However, on the strategic level, business model is defined as the practice of enterprise strategy and involves value proposition, market positioning, organization behavior, competitive advantage and sustainability. Most definitions of business model adopt this concept. In their study, Chesbrough and Rosebloom (2001) elaborated how an enterprise adopts business models to create business value in market. In the current rapidly changing business environment, enterprises should make timely business model innovation to obtain long-term competitive advantage and sustained profitability.

In summary, this study suggests that business model innovation is a process by which an enterprise adopts a customer-centered strategy and formulates product operation model to create values for customers by conducting an environmental analysis and organizational internal analysis.

(3) Supply chain management innovation

The thought of supply chain management was put forward in 1980s. Its concept comes from Porter's "value chain" which was published in his paper in 1980. Supply chain management is referred as to a management of whole process from raw material to products including logistics, funds and information flow. Simon (2000) argued that supply chain management reflects the relationship among a company, its immediate supplier, indirect supplier and its customers. Ma Shihua (1998) pointed out that a company of supplier chain management integrates its clients with stakeholders such as suppliers, distributors and retailers by controlling information flow. Chen Guoquan (1999) suggests that supply chain management is a process to plan, organize, coordinate, control and operate a whole supply

chain to achieve 6R goals, which means to deliver products of right quality, right quantity and right state to right customers at right places on right time.

So far, supply chain management has gone through three developmental stages: infancy, preliminary formation stage, and development stage. The infancy stage appeared in 1980s when the internal operation of enterprises was the main focus. In the preliminary formation stage, the emphasis was given to the actual operation of enterprises. From 1990 to present, it has been the development stage focusing on partnership role. While centering on customer's needs, supply chain management has developed into a direction of being swift, virtual, global, "green" and electronic (Zhao Meiyu, 2000).

With an increasing competition, the present situation of supply chain management in China lags behind the real demand and enjoys a low-level effectiveness. The main problems include incomplete supply chain management system, lack of coordination mechanism of supply chain management, irrational customer's service system, low level of sharing information and lack of assessment mechanism of supply chain management (Dong Anbang, 2002). In order to improve the supply chain management in China, it is necessary to innovate the supply chain management.

At present, the innovation of supply chain management concentrates the following aspects: 1) formation of strategic supply chain alliance; 2) globalization of supply chain management; 3) establishment of green supply chain; 4) new application of information technology in supply chain management (Deng Yun, 2005).

In summary, this study suggests that supply chain management innovation adopts the scientific management, innovative approaches and open management mode to effectively integrate resources by means of advanced management methods and technology. By doing so, supply chain management innovations such as formation of supply chain alliance, globalization of supply chain networks and application of information technology in supply chain can be achieved on basis of the traditional supply chain management. The measurement criteria for the innovation involve cost reduction, competitive advantage and risk resistance ability (Liu Jiangting, 2009).

2.3.4 The impact of the driving forces on strategic innovation

The driving forces for strategic innovation include internal and external factors. The internal driving forces include business performance, competitiveness and strategic flexibility; external driving forces involve market competition, market collaboration and supply chain

management.

The studies on the impact of the driving forces on strategic innovation are not relatively abundant. Rajgopalan and Spreitzer (1996) claim that strategic innovation consists of two elements: first, the change of strategy is caused by the internal environment, such as the scope of enterprises, resources allocation, competitive advantage and coordination; second, strategic innovation is caused by the change of the external environment and the reform of the enterprise. Strategic innovation is driven by the external and internal environment. Xiang Gang et al. (2004) claim that the continuous internal innovative driving force is the innovative awareness of entrepreneurs and employees, the benefit from innovation; the external innovative driving forces are the progress of technology, market demand, and government policy. Luo Ling et al, Diaozhao Feng (2007) state that internal driving forces of strategic innovation include the following five elements: the innovation awareness of entrepreneurs and employees, innovative spirit, the benefit from innovation, the innovation culture and teamwork in the enterprise. Ouyang Xinnian (2004) articulates that external forces are driven by the demand, technology, and government influence and market competition.

The study above is discussed from the perspective of internal and external factors. In the increasingly dynamic and complex environment of market competition, the demand in the market changes very fast; therefore, in order to win out in market competition, enterprises have to turn to strategic management. When facing the fierce competition in the market, enterprises have to break through the old strategic model, conduct innovation, and create more value for their customers to maintain their competitive edge.

In other words, it is the fierce market competition that has driven the enterprise strategic innovation to maintain their competitive advantage. When facing competition in the market, enterprises find it difficult to survive on their own so they have to turn to collaboration with other companies, which has become a norm. The enterprises enhance their cooperation with each other in terms of communication and integrating resources, which may result in greater competitive advantages.

Chapter 3: Hypotheses and Research Model

This chapter is going to review how the driving forces of strategic innovation influence strategic innovation. The hypotheses are proposed and a conceptual model is to be established in this chapter.

3.1 Hypotheses

3.1.1 The relationship between business performance and strategic innovation

Currently, in the studies of the relationship between business performance and strategic innovation, business performance tends to be considered as a scale to measure the outcome of strategic innovation (Luo Ling, 2007). Business performance is an effective way to motivate employees to conduct strategic innovation because employees' willingness to innovate can finally make innovations happen and intrinsic motivation is one drive of innovation.. If extrinsic motivation is internalized, it can also facilitate strategic innovation. Therefore, the improvement of business performance could motivate employees to innovate.

Berends (2006) pointed out that one's will to innovate is the source of innovative incentives and the incentives can only work effectively when employees hold the positive attitude towards innovation. That is to say, effective incentives can motivate employees to innovate. In terms of incentives, Liu Yun and Shi Jintao (2009) suggested that incentives that are not directly related to work, for example, salary or others' compliments are defined as extrinsic incentives. Those who are more susceptible to extrinsic incentives tend to be driven by extrinsic motivations. The more extrinsic-incentive-oriented they are, the strong impact the innovative atmosphere can exert on them. So the business performance of an enterprise decides the salary of employees and can also influence employees' innovation and enterprises' strategic innovation. Besides, when people expect to benefit from strategic innovation, the potential benefits, they will be motivated to break through the existing situation to achieve innovation. After realizing innovation, the benefits obtained from innovation will be distributed to the employees and hence the balance of interests will be achieved. When all the strategic innovations are completed, the balance of interests can be realized. Therefore, the following hypotheses are proposed:

H1: Business performance has a positive impact on strategic innovation.

H1a: Business performance has a positive impact on organizational innovation.

H1b: Business performance has a positive impact on supply chain innovation.

H1c: Business performance has a positive impact on business model innovation.

3.1.2 The relationship between competitiveness and strategic innovation

As seen in the previous chapter, the concept of core competence was first proposed by American Professor, Prahalad and British professor, Hamel. Anjana (2004) did a study of pharmaceutical companies to explore the relationship among strategic management, core competence and flexibility. Fleury (2005), using the Brazilian telecommunications industry as an example, through theoretical framework and case studies, has defined the competitiveness of enterprises and discussed the relationship between the competitiveness of enterprises and corporate strategies. Wang Yi (2000) suggested that the trend in innovation theories is that the enterprises' technological capability, innovation capability and core competence are increasingly more the same in a sense of concept and innovation is the key to build up, upgrade and utilize core competence. Kang Rongping et al. (2001) adopted a strategic capability matrix to analyze Galanz Group's core competencies and find that the growth of the enterprise is a growth from competence to core competence. The further study by Li Ye et al. (2005) suggests that the key of Galanz's sustainable growth is its constant strategic innovation based on the changes of the environment, especially the innovation in growth strategy, which leads to business transformation and helps to achieve the sustainable growth and great development. It is easy to find that an enterprise's core competence underlies the competitive advantage to obtain strategic innovation as well as profits. Thus, the following hypotheses are proposed:

H2: Core-competence has a positive impact on the strategic innovation.

H2a: Core-competence has a positive impact on the organizational innovation.

H2b: Core-competence has a positive impact on the supply chain innovation.

H2c: Core-competence has a positive impact on business model innovation.

3.1.3 The relationship between strategic flexibility and strategic innovation

Strategic flexibility means that an organization's ability of constant interacting with internal environment, changing or adjusting the environment or responding to the

environment. Strategic flexibility also refers to an enterprise's ability to invest and utilize resources to respond to environmental changes (Katsuhiko, 2004). Strategic flexibility generally includes resource flexibility and coordination flexibility, where resource flexibility is determined by the properties of the resource itself while coordination flexibility is the enterprise's ability to utilize resources. For an enterprise, the higher the enterprise's resource flexibility is, the more easily the enterprise can utilize existing resources to innovate; so the cost of seeking for new resources can be reduced. The higher the enterprise's collaborative flexibility is, the more resources the enterprise can access to meet the needs of innovation. Li's (2010) study indicated that strategic flexibility has a positive impact on enterprise strategic innovation. Through studying a sample of 417 enterprises, Antonio (2005) found that strategic coordination flexibility has a positive impact on product innovation and can improve the organization's ability of responding to environmental changes. Sanchez (1995) concluded that strategic coordination flexibility can promote the innovation of an enterprise under the condition of a changing environment. He Yuetong (2011) selected 607 Chinese companies for the research and found that coordination flexibility plays an active role in the enterprise innovation and in gaining profits. Chen Litian (2012), with a sample of 567 enterprises in Zhejiang Province, explored the impact of strategic coordination flexibility on product innovation and found that strategic coordination flexibility positively relate to product innovation capability. Therefore, strategic flexibility is essential to enterprise strategic innovation. Thus, the following hypotheses are proposed.

H3: Strategic flexibility has a positive impact on strategic innovation.

H3a: Strategic flexibility has a positive impact on organizational innovation.

H3b: Strategic flexibility has a positive impact on strategic supply chain innovation.

H3c: Strategic flexibility has a positive impact on business model innovation.

3.1.4 The relationship between market competition and strategic innovation

According to Schumpeter's hypothesis (Schumpeter, 1934), the factors impacting on enterprise innovation include the size and market power. After that, some other scholars did further studies of this topic. Arrow (1962) articulated that a competitive market tends to encourage enterprises to innovate. Aghion (1997) built an incremental innovation model to analyze the relationship between market competition and growth. He suggested that when it is easy to imitate or when there is higher technology spillover, intense competition in product market can facilitate the growth of the enterprise, that is, market competition can help upgrade

product innovation. In international competition, Petit (2000) asserted that the effect of R&D spillover of multinational corporations depends on their R&D level and their international competitive strategy. Bai Ming and Li Guozhang (2006) used the data of 38 industry sectors in China to test how the intensity of market competition significantly affect innovation efficiency and found that the more competitive the industry is, the higher the innovation efficiency is. Sun Yongfeng and Li Yuan (2007) suggested that in a competitive and dynamic market environment, the fact that how fast the new products are introduced by competitors or how fast the products or services get out-of-date can have a strong impact on the progressive innovation of enterprises. Faced with fierce market competition, enterprises must break the original strategic model, conduct strategic innovation and adopt more innovative decisions to maintain their competitive advantages. The following hypotheses are proposed.

H4: Market competition has a positive impact on strategic innovation.

H4a: Market competition has a positive impact on organizational innovation.

H4b: Market competition has a positive impact on supply chain innovation.

H4c: Market competition has a positive impact on business model innovation.

3.1.5 The relationship between enterprise cooperation and strategic innovation.

In the competitive environment, no enterprise can achieve strategic innovation alone. Collaborations between enterprises make the integration of resources possible so that the enterprises can utilize each other's advantages and access more opportunities and resources. In addition, collaboration can reduce the risks of developing new technologies or new markets to promote the generation of more innovations, especially strategic innovation. Hagedoorn (1993) stated that the motive of strategic technological collaboration among enterprises can be summarized as research and development, technology learning, access to market and other motives related to strategic objectives. Luo Wei and Tang Yuanhu (2001) articulated that the motives for enterprise cooperation are: sharing the cost and risks of research and development; enhancing financial strength; accelerating the flows of innovation knowledge among partners to obtain external technology; sharing resources and capabilities; grasping new technology and market sooner. Therefore, more companies are willing to cooperate in a certain period to set up the partnership of sharing information, benefits, and risks to take advantage of strategic alliances to gain competitive advantages. Luo Wei and Tang Yuanhu (2001) pointed out that through cooperation, the outcome that enterprises may gain from sharing resources, capacities and technologies includes the creation of tangible resources, such as new products, new

technology, the improvement and development of existing products and techniques as well as the development of enterprise capacities. Therefore, this thesis proposed the following hypotheses:

H5: Business cooperation has a positive impact on strategic innovation.

H5a: Business cooperation has a positive impact on organizational innovation.

H5b: Business cooperation has a positive impact on supply chain innovation.

H5c: Business cooperation has a positive impact on business model innovation.

3.1.6 The relationship between supply chain and strategic innovation

The existence and development of supply chain is to create new value for the enterprise. Supply chain management focuses on how enterprises build their core competencies through establishing a strategic partnership with other enterprises, so that the sharing of information and knowledge can be enhanced, the synergy of strategies between strategic partners can be maintained, and more innovations would be achieved. Gilbert and Cvsa (2003) discussed that suppliers' strategic commitment to price can motivate the innovation of the downstream enterprises of the supply chain. Cai Taihua et al., (2010) explored the innovation and cooperation between the cluster supply chains with game theory and the results showed that the profits gained from cooperative research and development are significantly higher than those gained from non-cooperative research and development.

Liu Chunling et al., (2011) did a case study of the clusters of enterprises and they explored the inherent development rules of the technology innovation of the cluster supply chain under the condition of horizontal cooperation, and concluded that the vertical collaboration of supply chain based on the integration of the local industrial cluster can strengthen the technological innovation capability of enterprises cluster.

Therefore, this thesis proposes the following hypotheses.

H6: Supply chain management has a positive impact on strategic innovation.

H6a: Supply chain management has a positive impact on organizational innovation.

H6b: Supply chain management has a positive impact on supply chain management innovation.

H6c: Supply chain management has a positive impact on business model innovation.

In this research, enterprise strategic innovation is measured in three dimensions:

business model innovation, organizational innovation and supply chain innovation. Each factor affecting enterprise strategic innovation is analyzed in detail in order to seize the opportunity of enterprise strategic innovation, to reduce the risks of strategic innovation and to enhance an enterprise's competitive advantage. In the dynamic and complex environment of market competition, through the interaction of external and internal driving forces, the enterprises would conduct strategic innovation constantly.

The hypotheses above are summarized in Table 3-1 below.

Table 3- 1 The hypotheses of the driving force mechanisms for strategic innovation

Factors influencing strategic innovation	Strategic innovation	Hypotheses	
Business performance	Organization innovation	H1: Business performance has a positive impact on strategic innovation.	H1a: Business performance has a positive impact on organizational innovation.
	Supply chain management innovation		H1b: Business performance has a positive impact on supply chain innovation.
	Business model innovation		H1c: Business performance has a positive impact on business model innovation.
Competitiveness	Organization innovation	H2: Competitiveness has a positive impact on the strategic innovation.	H2a: Competitiveness has a positive impact on the organizational innovation.
	Supply chain management innovation		H2b: Competitiveness has a positive impact on the supply chain innovation.
	Business model innovation		H2c: Competitiveness has a positive impact on business model innovation.
Strategic flexibility	Organization innovation	H3: Strategic flexibility has a positive impact on strategic innovation.	H3a: Strategic flexibility has a positive impact on organizational innovation.
	Supply chain management innovation		H3b: Strategic flexibility has a positive impact on strategic supply chain innovation.
	Business model innovation		H3c: Strategic flexibility has a positive impact on business model innovation.
Market competition	Organization innovation	H4: Market competition has a positive impact on strategic innovation.	H4a: Market competition has a positive impact on organizational innovation.

	Supply chain management innovation		H4b: Market competition has a positive impact on supply chain innovation.
	Business model innovation		H4c: Market competition has a positive impact on business model innovation.
Enterprise cooperation	Organization innovation	H5: Business cooperation has a positive impact on strategic innovation.	H5a: Business cooperation has a positive impact on organizational innovation.
	Supply chain management innovation		H5b: Business cooperation has a positive impact on supply chain innovation.
	Business model innovation		H5c: Business cooperation has a positive impact on business model innovation.
Supply chain	Organization innovation	H6: Supply chain has a positive impact on strategic innovation.	H6a: Supply chain management has a positive impact on organizational innovation.
	Supply chain management innovation		H6b: Supply chain management has a positive impact on supply chain innovation.
	Business model innovation		H6c: Supply chain management has a positive impact on business model innovation.

Source: reorganized by author

3.2 Research Model

Based on the hypotheses, the research topic was further analyzed. This thesis studies strategic innovation from three aspects, that is, business model innovation, organization innovation and supply chain innovation.

Any behavior is the result of the interaction between internal factors and external factors and so is strategic innovation. Through the literature review, it can be concluded that the driving forces for strategic innovation are caused by two main reasons: First, the strategic reform results from the change of business scope, resource allocation, competitive advantage and coordination; second, the reform of a company is caused by the change of external environment and organization reform (Rajanopalan, 1996). The internal driving forces of strategic innovation are the awareness of innovation and the innovativeness of the entrepreneurs and employees, and the benefits from innovation while the external driving forces are the advancement of technology, government influence, market demand, market competitiveness, technical track, the self-organization of social, economic and technology

systems (Xiang Gang, 2004; Ouyang Xinnian, 2004).

In this thesis, the external driving forces of strategic innovation are categorized into market competition, supply chain, business collaboration, while the internal driving forces are classified into three types of business performance, competitiveness, strategic flexibility. Enterprise strategy innovation is generated by the interactions among the internal and external driving forces and the relationship between each of the driving forces and strategic innovation will be analyzed in detail. The mechanism model of strategic innovation of this study is demonstrated below in Figure 3-1:

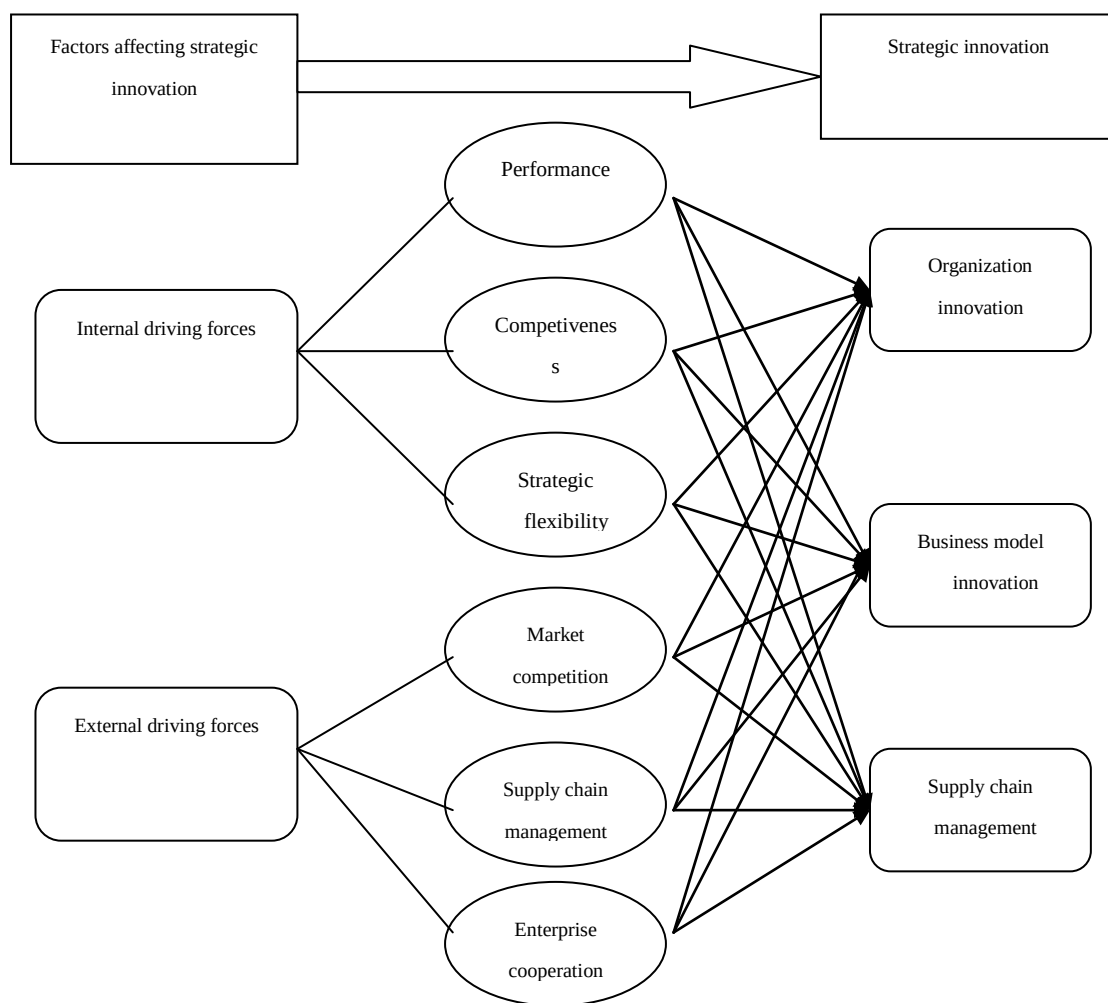


Figure 3- 1 Mechanism model of the driving forces influencing strategic innovation

Source: reorganized by author

And according the mechanism model, we can summarize the hypotheses in Table 3-2

below

Table 3- 2 The hypotheses of the mechanism model

Hypotheses		
H1: Business performance has a positive impact on strategic innovation.	H1a	Business performance has a positive impact on organizational innovation.
	H1b	Business performance has a positive impact on supply chain management innovation.
	H1c	Business performance has a positive impact on business model innovation.
H2: Competitiveness has a positive impact on the strategic innovation.	H2a	Competitiveness has a positive impact on the organizational innovation.
	H2b	Competitiveness has a positive impact on the supply chain management innovation.
	H2c	Competitiveness has a positive impact on business model innovation.
H3: Strategic flexibility has a positive impact on strategic innovation.	H3a	Strategic flexibility has a positive impact on organizational innovation.
	H3b	Strategic flexibility has a positive impact on strategic supply chain management innovation.
	H3c	Strategic flexibility has a positive impact on business model innovation.
H4: Market competition has a positive impact on strategic innovation.	H4a	Market competition has a positive impact on organizational innovation.
	H4b	Market competition has a positive impact on supply chain management innovation.
	H4c	Market competition has a positive impact on business model innovation.
H5: Business cooperation has a positive impact on strategic innovation.	H5a	Business cooperation has a positive impact on organizational innovation.
	H5b	Business cooperation has a positive impact on supply chain management innovation.
	H5c	Business cooperation has a positive impact on business model innovation.
H6: Supply chain management has a positive impact on strategic innovation.	H6a	Supply chain management has a positive impact on organizational innovation.
	H6b	Supply chain management has a positive impact on supply chain innovation.

	H6c	Supply chain management has a positive impact on business model innovation.
--	-----	---

Chapter 4: Research Methodology

This chapter deals with the methods to collecting data, explaining the design of the questionnaire, the sample and the use of the case study as a research method. Data collection and data processing methods are also discussed in this chapter

4.1 The theoretical foundation of the research methodology

There is a research methodology for three purposes – exploratory, descriptive, or explanatory (Yin, 2003). In the social sciences, a case study is a research method involving an up-close, in-depth, and detailed examination of a subject of study (the case), as well as its related contextual conditions. Although no single definition of the case study exists, case-study research has long had a prominent place in many disciplines (Yin, 2003). Thomas (2011,p17,6,511-521) offers the following definition of case study:

"Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more method. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame — an object — within which the study is conducted and which the case illuminates and explicates."

As other research methods, case study follows a set of prescribed procedures and steps. Case study tends to focus on the occurrence of an event and its development in a specific context (Eisenhardt, 1989). Case study is meant to answer How and Why questions.

This study includes an exploratory case study, which intends to help with the in-depth analysis of a single case study method (Eisenhardt, 1989). Single case study approach helps to capture and track new issues emerged in management practices (Zhouchang Hui, 2005). So, through case studies, we can better answer the questions, such as “what are the company's current strategies and how are they developed?” “how does strategic innovation impact on the core competences of enterprises?” “what are the strategic innovations that can enhance the core competence?”. These are exactly the main questions to be answered in this study.

In this study, JGTL is chosen as the sample company for two reasons. First, selecting a typical case is a prominent study approach. As Eisenhardt (1989) points out, for the case study,

choosing random sample is not only unnecessary, but also inappropriate. Pettigrew (1990) emphasizes that it is more appropriate to select typical or even extreme cases in case studies because typical cases help get rich, detailed and in-depth data. Secondly, from the perspective of the data obtained, JGTL and the researchers enjoy the advantage of "geographic proximity and "close relationship", which enable the researchers to have the opportunity to learn and observe the company closely. We interviewed JGTL respectively in March 2010, October to December 2010, January 2011 and collected substantial information and data.

In the process of data collection and analysis, the present study strictly follows the general rules and research methods of case study (Yin, 1994; Eisenhardt, 1989; Pettigrew, 1990). Meanwhile, we also referred the case study methods proposed by Plowman et al. (2007).

Besides the case study, data collection includes literature review and a survey, which are to be detailed as follows:

(1) Literature refers to the strategic innovation of the companies reported by mass media and corporate websites. We have also reviewed articles on corporate strategic innovation, innovation action programs and progress reported in official research reports or evaluation reports.

(2) The survey was conducted through a structured questionnaire to collect data on the research questions. In this study, the questionnaire was addressed to IT trade-oriented enterprises in Sichuan province. To help the respondents understand the questionnaire correctly and to make sure the accuracy of the survey, we sat at the table with the respondents and asked them to reply the questionnaires at the spot, which also guaranteed a high rate of return.

4.2 Data collection

The survey was conducted from March 2014 to June 2014. The questionnaires were distributed mainly to the IT companies in Sichuan Province, including Chengdu Zhaoshun Technology Company, Chengdu Jieke IT Company, Chengdu Hongzhiyuanda Company, totally 190 IT trading companies. As discussed above, these companies and the researcher enjoy the advantage of "geographic proximity and "close relationship", which enabled the researcher to have the opportunity to learn and observe the company closely. The questionnaires were collected in the companies and were filled by the middle and high-level

leadership of the companies.

In this study, 191 questionnaires were distributed and 191 were returned. The high return rate can be attributed to the fact that the researcher in person collected all the questionnaires. Finally, 176 questionnaires were identified as valid, accounting for 92.15% of all the questionnaires distributed.

4.3 Data Analysis Method

. For this study, data were collected through literature review and other secondary data, interviews for the case study, and the above mentioned questionnaire. We used SPSS 17.0 software to analyze the data collected through the questionnaire. Cronbach consistency coefficient (α coefficient) was adopted to analyze the internal consistency of the questionnaire reliability since it is the most suitable method for homogeneity test in verifying each item within each factor.

Since many variables were used in this study and they are more or less correlated, factor analysis was used to get the principal factors out of a large set of correlated variables. Factor analysis is a statistical method that describes variability among observed, correlated variables and is used mostly for data reduction purposes.

In the strategic innovation factor model proposed by us, the independent and dependent variables are subjective measures and are difficult to be measured directly. Besides, the causal relationship between the variables is complex, and therefore it is not appropriate to adopt the traditional methods of data analysis. Therefore, this study adopts the method of structural equation modeling to verify the analysis, using AMOS17.0 to do the confirmatory analysis of main factor.

Chapter 5: Data Analysis

To verify the hypotheses of the study, this chapter elaborates on the design of the questionnaire and sample. This chapter will also analyze each variable as well as the empirical study and the descriptive statistical analysis, correlation analysis and the results.

5.1 The Design of Questionnaire

The questionnaire for this study is based on the literature review and is shown as appendix to this thesis. Each item of the questionnaire is measured by five-point Likert scale, namely, 1 means “strongly disagree” and 5 means “totally agree”. The questionnaire is composed of three parts:

(1) The information of each participant. It includes gender, age, and marital status, education, working time, the department and the position.

(2) Measuring the factors influencing strategic innovation. Totally, there are 29 questions covering six dimensions, including market competition, enterprise cooperation, supply chain, business performance, competitiveness and strategic flexibility. The items in the questionnaire are scored in five points.

(3) Measuring strategic innovation. There are totally 12 items adopted for measuring organizational innovation, business model innovation and supply chain innovation. The items in the questionnaire are scored in five points positively.

5.2 The Description of the Sample Companies

The following is a brief description of the enterprises surveyed (Table5-1), including the size of the company, ownership and the year of establishment.

(1) The size of the companies

The companies are mainly described in terms of the “number of employees” and their “total assets”. According to the “number of employees”, the companies are categorized into three levels: the companies with a staff of less than 300 people, the companies with a staff of 300-2,000 people and the companies with a staff of more than 2,000 people. The “total assets”

are also categorized into three levels: the companies with assets less than 40 million RMB (6.5 million Euro), the companies with assets of 40 million to 400 million RMB and the companies with assets of more than 400 million RMB.

In order to fully understand the situation of the IT trade enterprises in Sichuan province, the samples of large, medium and small enterprises that we selected are respectively 1.7%, 5.11% and 93.18%, so as to maintain the ratio of the companies of different size. Based on the results, it can be seen that most respondent IT trading companies are small sized, which may enable the companies to be flexible and can adapt to the changes of market easily.

(2) The ownership of the companies

In terms of the ownership of the companies, it is found from the table above that no IT trading enterprise among this sample is owned by the government. Private enterprises account for the vast majority in this industry, 158 private companies counting 89.78%; 18 joint-venture enterprises count for 10.23%; foreign companies account for 0 (See Table 4-1). It can clearly be seen from the results that most companies engaged in IT trade business are domestic private enterprises and their prosperity is an important drive for the development of China's economy.

(3) The years of the establishment of the companies

The companies established less than “5 years” count for the majority of the participants, which are about 51 companies representing 28.98%; they are followed by the companies established for “5-10 years”, a total of 106 companies representing 60.23%; only 19 companies have been established for “more than 10 years,” representing 10.78%. As IT trade enterprises are considered highly risky, we have not found many cases that have been established for more than ten years in this survey. The statistics also illustrate the rapid development of IT trading enterprises in recent years as those established after 2006 account for 71%.

Table 5- 1 Basic information of the enterprises surveyed

Basic information of enterprises		Number of employees	Number of enterprises	Ratio
Size of enterprises	Number of employees	<300 people	164	93.18%
		300-2000 people	9	5.11%
		>2000 people	3	1.7%
	Total value of the asset	<40 million RMB	164	93.18%
		40 million RMB to 400 million RMB	9	5.11%
		> 400 million RMB	3	1.7%

Ownership of the companies	State-owned	0	0
	Private	158	89.78%
	Foreign company	0	3.64%
	Joint –venture	18	10.23%
	Others	0	0
Years of establishment of the companies	More than ten years	19	10.78%
	Five to ten years	106	60.23%
	Less than five years	51	28.98%
The total number of companies		176	100%

Source: reorganized by author

5.3 Data Analysis

5.3.1 Scale Reliability and Validity Testing

This thesis has adopted factor analysis and tested the structural validity with SPSS 17.0. The study has adopted Cronbach coefficient to analyze the internal validity of consistency. Cronbach α can also be used to test the homogeneity of each factor.

1) The Test of the Reliability and Validity of the Survey on the Factors Influencing Strategic Innovation

(1) The exploratory factor analysis of the scales of the factors influencing strategic innovation

A factor analysis is made on 29 questions in the questionnaire of the factors influencing strategic innovation. We use 59 copies of the responded questionnaires, which is a half of the total responses, to conduct an exploratory factor analysis on the scale of the factors influencing strategic innovation. The value of KMO is 0.785, which is larger than 0.6, so a factor analysis can be conducted for the whole data of the questionnaire. According to the correlation matrix between variables, we take principal component analysis to extract the main factors. Then we rotate it with the maximum variance method to extract the main factors with eigenvalues greater than one, and got six main factors that can explain 66.118% of the variance, having met the requirements of statistics, as illustrated in Table 5-2.

Table 5- 2 The exploratory factor analysis and reliability test result of the scale of the factors influencing strategic innovation

Factor	Item	Factor loading						α
		F1	F2	F3	F4	F5	F6	
F1	B2.Speed of product innovation	0.571						0.667
	B3.Market competitor	0.505						
	B4.Product demand	0.537						
	B5.Outlook of industry	0.581						
F2	B6 Sales growth		0.515					0.648
	B7.Market share growth		0.475					
	B8.The number of new products in last 3 years		0.598					
	B9.types of new services in last 3 years		0.692					
F3	B10.Measures to strengthen customers' relations			0.514				0.722
	B11.Measures to strengthen suppliers' relations			0.626				
	B12.Measures to strengthen competitors' relations			0.579				
	B13.Measures to strengthen government's relations			0.503				
F4	B15.High-risk and high-return projects				0.466			0.549
	B16. New products, new technology, new services first introduced in the industry				0.518			
	B17.New competitions in the industry				0.599			
	B18.Acquirement of new resources to expand the existing business				0.624			
F5	B19.New opportunities from the change of customers' needs					0.487		0.574
	B20.Adjustments of the government policies and laws that affecting the development of the companies					0.541		

F5	B21.Focusing on one or two businesses to gain competitive advantages					0.457		0.574
	B22.Successful achievement of the multiple business					0.588		
F6	B23.Needs for co-development of market						0.683	0.789
	B24.Needs for expanding social relationships						0.560	
	B25.Partners enjoying the advantages that this company fails to have.						0.544	
	B26.Partners enjoying the close relationship with the government which the company fails to access.						0.582	
	B27. Satisfying the needs for co-developing the market						0.486	
	B28.Expanding the social relationship						0.600	
	B29.Frequent communication in various ways between the two parties						0.601	
% of Variance		26.497	8.587	6.129	5.294	5.132	4.774	
Cumulative%		66.118%						
Crobach α (total)		0.843						

Source: reorganized by author

The above table shows that the compositions of F1-F6 are consistent with the previously envisaged factors, namely market competition, business performance, supply chain, competitiveness, strategic flexibility and enterprise cooperation.

The loadings of each variable on the common factors after rotation show that the loadings of B2-B5 are the highest on Factor 1, the loadings of B6-B9 on Factor 2, the loadings of B10-B13 on Factor 3, the loadings of B15-B18 on Factor 4, the loadings of B19-B22 on Factor 5, and the loadings of B23-B29 on Factor 6. However, the variables B1 and B14 are not regularly distributed, so they cannot constitute a main factor. Comparing with the questionnaire, it can be seen that the main factor extraction is basically in line with the theoretical expectation. By conducting an internal consistency reliability analysis about the items of each factor, we get a result of factor analysis as shown Table 5-3.

The above table shows that the composition of F1-F6 is consistent with the previously envisaged factors, namely market competition, business performance, supply chain, competitiveness, strategic flexibility and enterprise cooperation. By calculating Cronbach consistency coefficient (α), we found that the coefficients of F1, F2, F3, F4, F5, F6 are 0.667, 0.648, 0.549, 0.574, 0.789 respectively and the total Cronbach coefficient is 0.843, indicating that the scale of the factors influencing strategic innovation is high with reliability.

(2) The confirmatory factor analysis of the scale of the factors influencing strategic innovation

After the exploratory factor analysis about the scale of the factors influencing strategic innovation, we need to conduct a confirmatory factor analysis to examine the construct validity of the scale of the factors influencing strategic innovation. The other half of the questionnaires, the remaining 60 questionnaires, is used to conduct the confirmatory factor analysis. For the effect of the data analysis and ease of operation, we chose to use the software AMOSE17.0 for the confirmatory factor analysis about the scale of the factors influencing strategic innovation. The result of the analysis is shown in Figure 5-1.

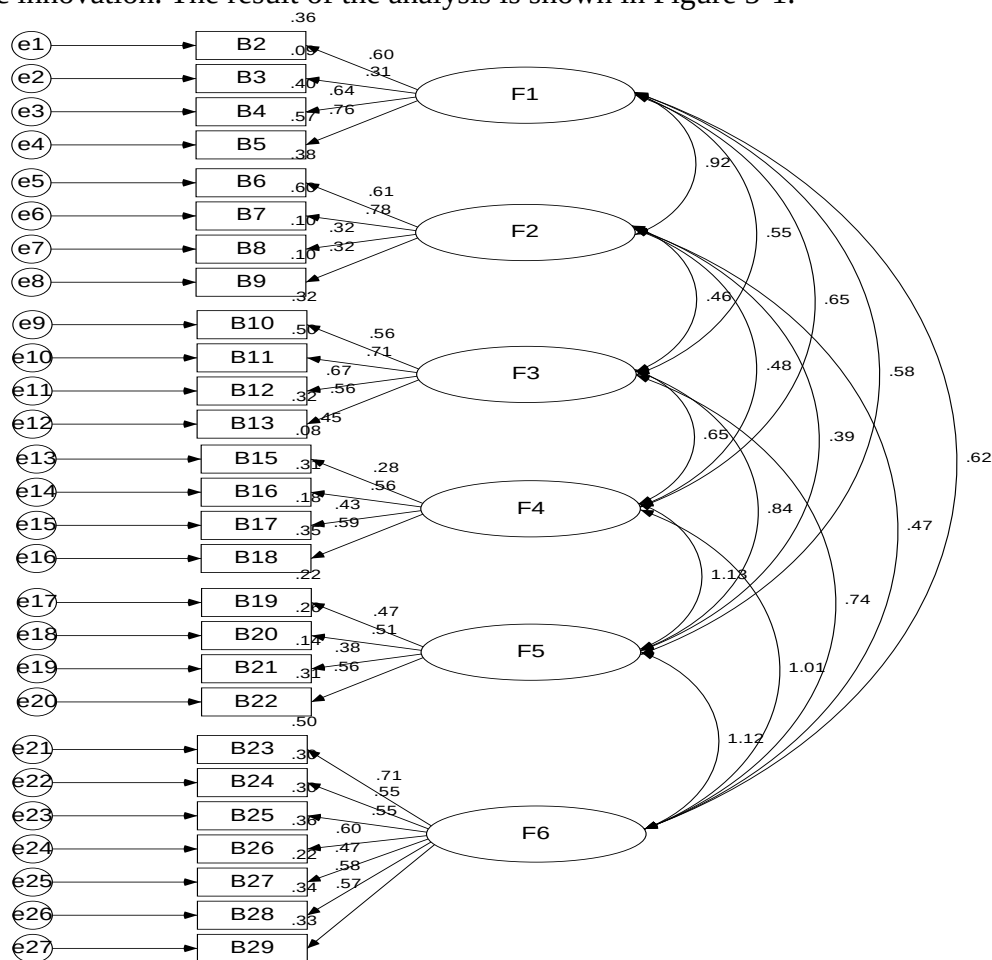


Figure 5- 1 the model of confirmatory factor analysis of the six factors influencing strategic innovation
Source: reorganized by author

F1, F2, F3, F4, F5 and F6 in the above figure stand for market competition (F1), business performance (F2), supply chain management (F3), competitiveness (F4), strategic flexibility(F5) and enterprise cooperation respectively(F6). The factor loadings meet statistical requirements. The results of the confirmatory factor model analysis are shown in Table 5-3.

Table 5- 3 The model fit of confirmatory factor analysis of the factors influencing strategic innovation

	Simple fit index			Absolute goodness fit index			Value fit index			
Index	PNFI	PGFI	χ^2/df	RMSEA	GFI	AGFI	NFI	IFI	TLI	CFI
Standard	>0.5	>0.5	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9
Model	0.509	0.621	1.736	0.079	0.91	0.866	0.91	0.94	0.86	0.93

Source: reorganized by author

The above table shows that the index χ^2 / df value of the simple fit index is 1.736, indicating a good fit of the model. The CFI has a value of 0.93, which meets Bentler's criteria, indicating a good model fit. In confirmatory factor analysis, scholars have generally concerned about the root mean square of error (RMSEA) index value of the absolute goodness of fit. In this study, the RMSEA value in this study is 0.079, which is less than 0.08, so it is within a reasonable range. In summary, most indexes are in a statistically acceptable range except AGFI and RFI, which are slightly less than 0.9. So, it can be concluded that the appropriateness and authenticity of the scale construct validity of the factors influencing strategic innovation has been verified.

2) The Reliability and Validity Test of the Questionnaire Variables of Strategic Innovation

(1) The exploratory factor analysis of strategic innovation scale

A factor analysis is made about the 12 questions in the questionnaire on knowledge sharing. The value of KMO =0.825a>0.6, an overall factor analysis can be done. We take a principal component analysis to extract the main factors and then rotate it with the maximum variance method to extract the main factors which eigenvalues are greater than one. The three main factors that are extracted can explain 54.695% of the variance as illustrated by Table 5-4.

Table 5- 4 The exploratory factor analysis of strategic Innovation scale and the reliability test

Factor	Items	Factor loading			α co-efficiency
		F1	F2	F3	
F1	C3. For the construction of supply chain, the company constantly introduces a variety of suppliers, partners and other participants	0.549			0.744
	C8. To seize the business opportunities, the company launches new products and services	0.595			
	C10. To seize the business opportunities, the company adjusts or draws up competition strategies.	0.502			
	C11. To seize the business opportunities, the company develops the tailored supply chain models	0.753			
	C12. To seize the business opportunities, the company introduces new partners to its supply chain	0.619			
F2	C1. The business model of the company can offer value-added products and services		0.496		0.659
	C2.The business model of the company can constantly introduce a large amount of diversified new customers.		0.662		
	C4.Innovations are introduced into the business model of the company		0.719		
	C5.The company can constantly introduce new ideas, approaches and products into its business model.		0.716		
F3	C6.The company can constantly introduce new operation flows, practices and regulations into its organization.			0.757	0.667
	C7. To seize the business opportunities, the company can develop new resources and capabilities.			0.791	
	C9. To seize the business opportunities, the company can change its organization in order to enter the new markets			0.528	
% of Variance		34.969	11.050	8.676	
Cumulative%		54.695%			
Crobach α co-efficiency (Total)		0.856			

Source: reorganized by author

As Table 5-4 shows, C3, C8, C10, C11, C12 are classified into the first category of factors, C1, C2, C4, C5 are classified into the second category of factors, and C6, C7, C9 are classified into the third category of factors, which is consistent with our expectations. On the basis of this analysis, we make an internal consistency reliability analysis about the items of

all factors to get a result as shown in Table 4-5 (N=119).

According to Table 5-4, F1 is composed of C3, C8, C10, C11, C12, which represents the innovation of enterprise supply chain; thus, it is named as the supply chain innovation; F2 is composed of C1, C2, C4, C5, describing the innovation of enterprise business model; thus, it is named as business model innovation; F3 is composed of C6, C7, C9, describing the innovation of enterprise resources and process; thus, it is named as organizational innovation.

By calculating the Cronbach consistency coefficient (α), we have found that the co-efficiency of F1, F2 and F3 is 0.744, 0.659 and 0.667 respectively showing a high degree of consistency. The total Cronbach α coefficient is 0.856, indicating that the scale of the strategic innovation construct has a high reliability.

(2) The confirmatory factor analysis of the strategic innovation scale

Following the exploratory factor analysis of strategic innovation scale, we have conducted a confirmatory factor analysis to test if the construct validity of the scale of strategic innovation is consistent with the research setting. The remaining half of the overall questionnaires (60 copies) was used for the confirmatory factor analysis. For the effect of the data analysis and ease of operation, we choose the software AMOS17.0 to do the confirmatory factor analysis about the scale of strategic innovation. The analysis results are shown in Figure 5-2.

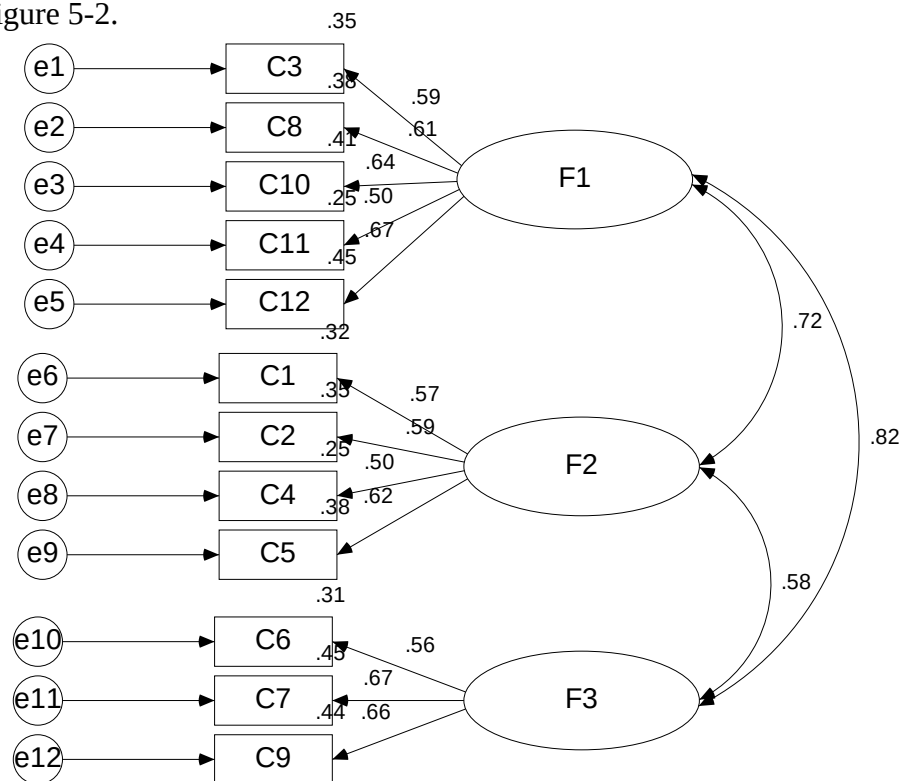


Figure 5- 2 the model of the confirmatory factor analysis of the three strategic innovation factors
Source: reorganized by author

The above figure shows that F1, F2, and F3 stand for supply chain innovation, business model innovation, and organizational innovation respectively. The factor loadings of the three factors are all above 0.5, meeting with the statistical requirement. The analysis results of the confirmatory factor model areas shown in Table 5-5.

Table 5- 5 Strategic Innovation confirmatory factor analysis model fit results

	Simple fit index			Absolute goodness fit index			Value fit index			
Index	PNFI	PGFI	χ^2/df	RMSEA	GFI	AGFI	NFI	IFI	TLI	CFI
Standard	>0.5	>0.5	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9
Model	0.631	0.598	1.361	0.055	0.915	0.870	0.816	0.944	0.92	0.94

Source: reorganized by author

The above table shows that, except for the values of AGFI and NFI indicators are slightly less than 0.9, the rest of the indicators are in line with the model statistical requirements. This illustrates that the strategic innovation scale has very reliable construct validity and enjoys a high level of appropriateness and authenticity.

5.3.2 Statistical Analysis

5.3.2.1 Descriptive Statistical Analysis

The main research variables of this study involve the factors influencing strategic innovation and strategic innovation path. The average value of all items of each variable is the score of each measurement dimension. The scale of the factors influencing strategic innovation has six main variables, namely the market competition, business performance, supply chain, competitiveness, strategic flexibility and enterprise cooperation; The main measurement variables of strategic innovation are the supply chain innovation, business model innovation, and organizational innovation. In this study, a Likert 5 point scale has been adopted to measure the main variables. The descriptive statistical result is shown in Table 5-6.

As the above Table shows, this study calculated the mean, standard deviation, skewness, and Kurtosis to measure the main variables for statistical analysis. Based on Kline's study (Kline, 2011), when the absolute value of skewness is less than 3 and the absolute value of Kurtosis is less than 10, the variables are normally distributed. Table 4-5 shows that skewness coefficient does not exceed 1.639 and Kurtosis coefficient does not exceed 3.845. So, it can be concluded that the major variables are normally distributed.

Table 5- 6 Table 5-6 the result of descriptive statistics

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Market competition	176	15.3950	2.46060	-.099	.222	-.528	.440
business performance	176	10.0504	2.57053	1.639	.222	3.845	.440
Supply chain	176	14.7983	2.63799	-.186	.222	.224	.440
competitiveness	176	14.4034	2.24484	-.152	.222	.686	.440
Strategic flexibility	176	14.5798	2.33795	-.103	.222	-.066	.440
Enterprise cooperation	176	30.0000	4.50235	-.432	.222	.123	.440
Supply chain innovation	176	19.1345	2.97995	-.316	.222	-.503	.440
Business model innovation	176	14.5546	2.40303	.014	.222	.333	.440
Organizational innovation	176	11.2353	2.04900	-.402	.222	.216	.440
Valid N	176						

Source: reorganized by author

5.3.2.2 The Result of Correlation Analysis

The independent variables in this study are the factors influencing strategic innovation, including six dimensions, namely market competition, business performance, supply chain, competitiveness, strategic flexibility and enterprise cooperation. The dependent variables mainly involve the three dimensions of strategic innovation, namely, supply chain innovation, business model innovation and organizational innovation. Before conducting the structural equation analysis, a correlation analysis about each research variable is needed. The Pearson correlation matrix is shown in Table 5-6. For the simplicity, the major variables are expressed by using the corresponding letters as follows: market competition (SC), business performance (JY), Supply Chain Management (GY), competitiveness (JZ), strategic flexibility (ZL), enterprises cooperation (QY), supply chain innovation (GYL), business model innovation (SYM), and organizational innovation (ZZ).

Table 5- 7 The correlation analysis of main variables

Variable	SC	JY	GY	JZ	ZL	QY	GYL	SYM	ZZ
SC	1								
JY	0.584**	1							
GY	0.464**	0.301**	1						
JZ	0.420**	0.262**	0.339*	1					
ZL	0.352**	0.171	0.489*	0.580**	1				
QY	0.400**	0.303**	0.559*	0.604**	0.718*	1			
GYL	0.380**	0.281**	0.421*	0.583**	0.609*	0.596**	1		
SYM	0.416**	0.345*	0.405*	0.557**	0.384*	0.528*	0.500*	1	
ZZ	0.336**	0.192*	0.354*	0.453**	0.488*	0.537**	0.560*	0.400**	1

Note: ** indicates at 0.01 level (two-tailed) the variables are significantly related; *.indicates at the 0.05 level (two-tailed) the variables are significantly related.

Source: reorganized by author

The above table shows that there are significant correlations among the main variables, suggesting that inter-dependent relationships exist among the various factors influencing strategic innovation and the variables of strategic innovation. In the analysis of structural equation it specifically suggests that the independent variables co-variate with dependent variables, which lays a basis for the structural equation analysis.

5.3.2.3 Structural Equation Analysis

According to the result of factor analysis and the original conceptual model and theoretical hypotheses, we establish the following initial structural equation model, as shown in Figure 5-3.

The initial model needs to be tested to check if the operational result of the Model is valid. RMSEA value is 0.072, less than 0.08, which meets with the statistical standards; chi-square is 1.610, less than 3, which meets the statistical standards. But AGFI value is 0.652 and GFI value = 0.699 < 0.90, suggesting the overall fit of the model is not good. The difference between the co-variance matrix of the model and the co-variance matrix of the sample data is significant. Therefore, the model needs to be corrected. According to the correction standard of structural equation model, the model is corrected as shown in Figure 5-4.

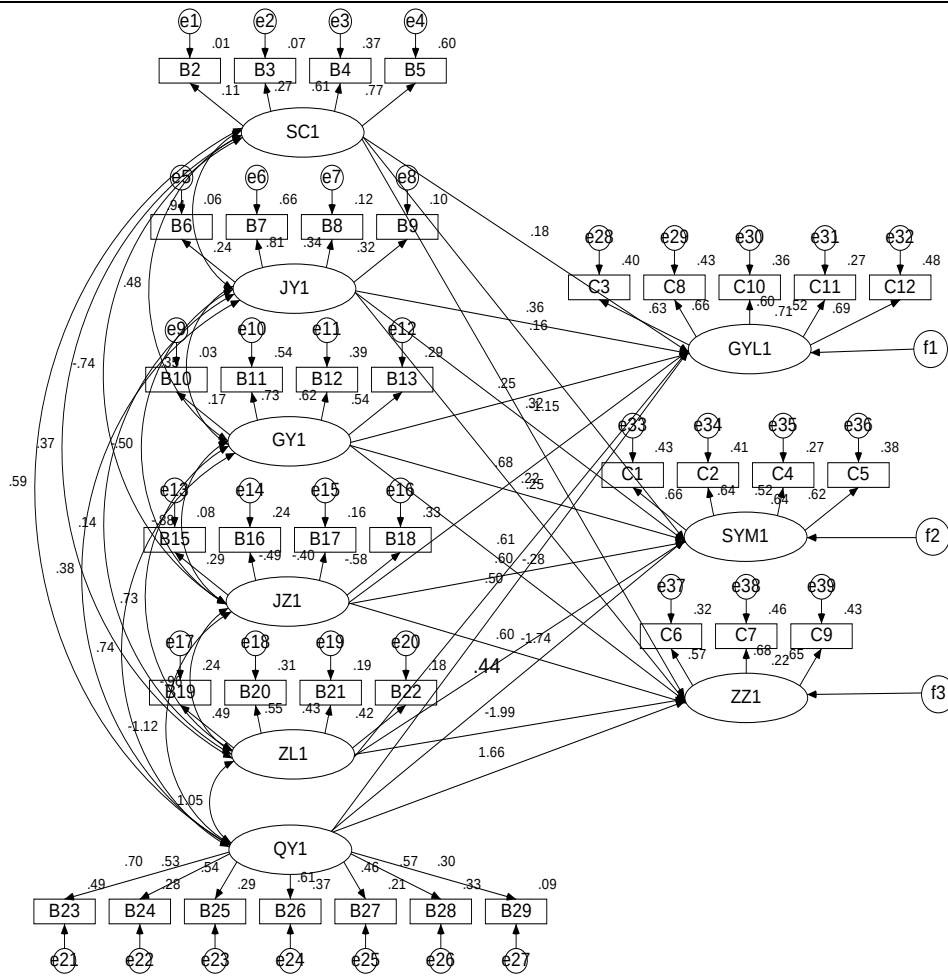


Figure 5- 3 Initial structural equation model

Source: reorganized by author

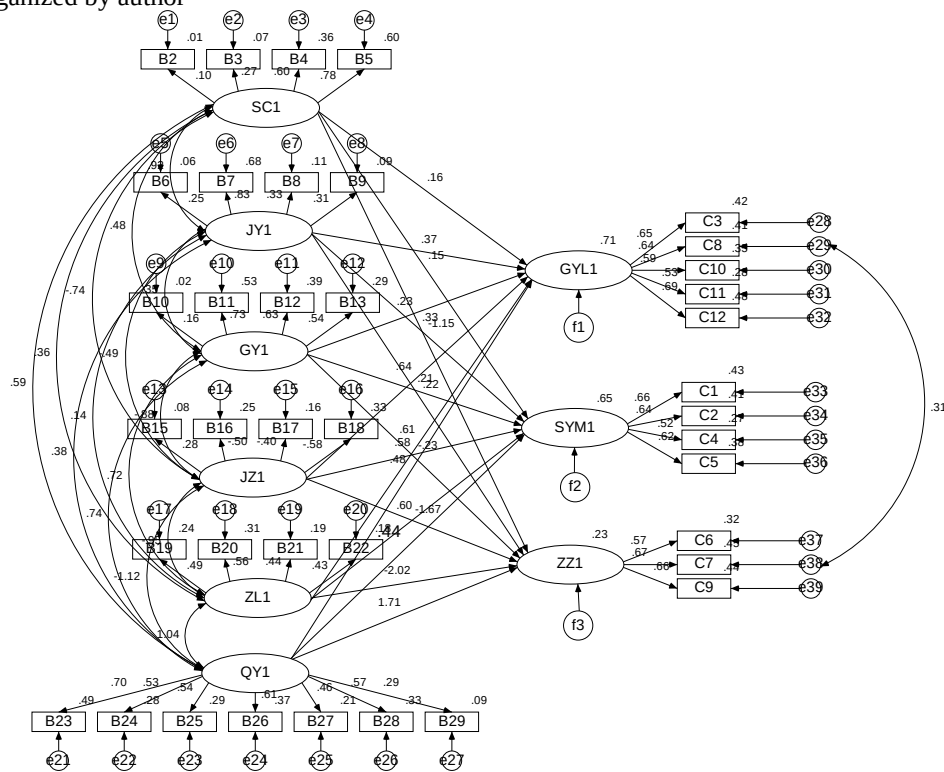


Figure 5- 4 The operational result of the corrected model

Source: reorganized by author

The operational result validity of the corrected model of mixed path is tested according to the specific results as shown in Table 5-8.

Table 5- 8 the test results of the corrected model of mixed path

Index	Simple fit index			Absolute goodness fit index			Value fit index			
	PNFI	PGFI	χ^2/df	RMSEA	GFI	AGFI	NFI	IFI	TLI	CFI
Standard	>0.5	>0.5	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9
Model	0.53	0.63	1.39	0.058	0.739	0.692	0.59	0.84	0.81	0.83

Source: reorganized by author

From the above table, it can be found that except that the simple fit index meets the requirements, the absolute goodness of fit index and the value fit index do not meet the statistical requirements. So, another correction for the model is needed. We change the path analysis of latent variables into the path analysis of the mixed model. The operational result of the initial mixed path model is shown in Figure 5-5.

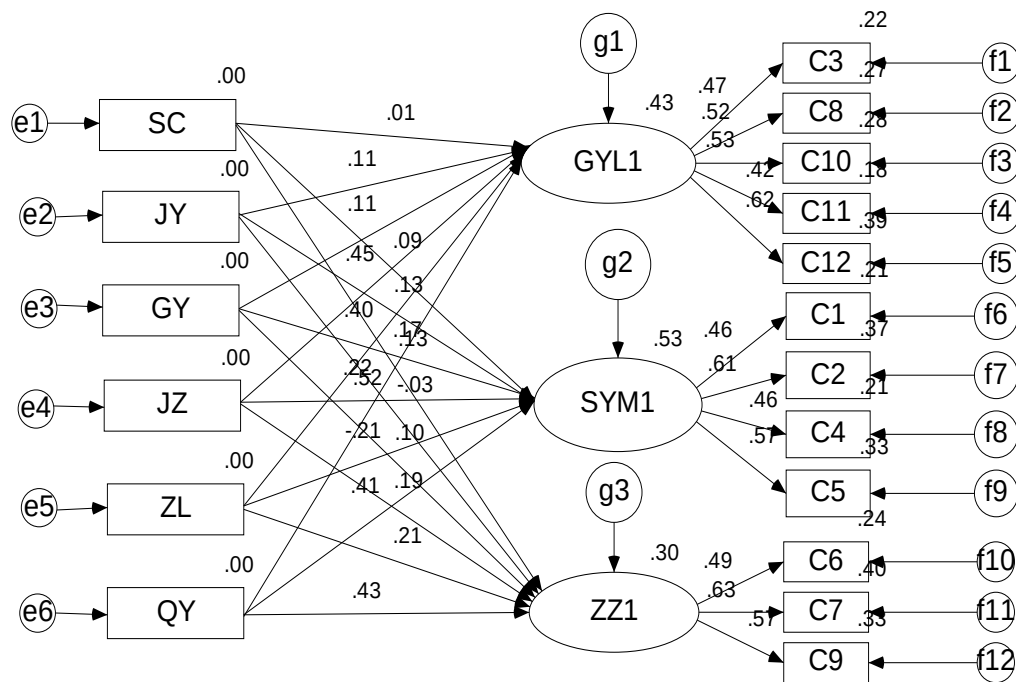


Figure 5- 5 The operational result of the initial mixed path model

Source: reorganized by author

However, the initial model of mixed path is not suitable for the raw data. RMSEA value=0.151>0.08; $\chi^2/df=3.685>3$, AGFI=0.552<0.90, GFI=0.678<0.90. These values do not meet the statistical standards, suggesting that the overall fit of the model is not good and the difference between the co-variance matrix of the model and the co-variance matrix of the sample data is significant. Therefore, the model of mixed path needs to be corrected.

According to the correction standard of AMOSE, the operational result of the corrected model of mixed path is shown in Figure 5-6.

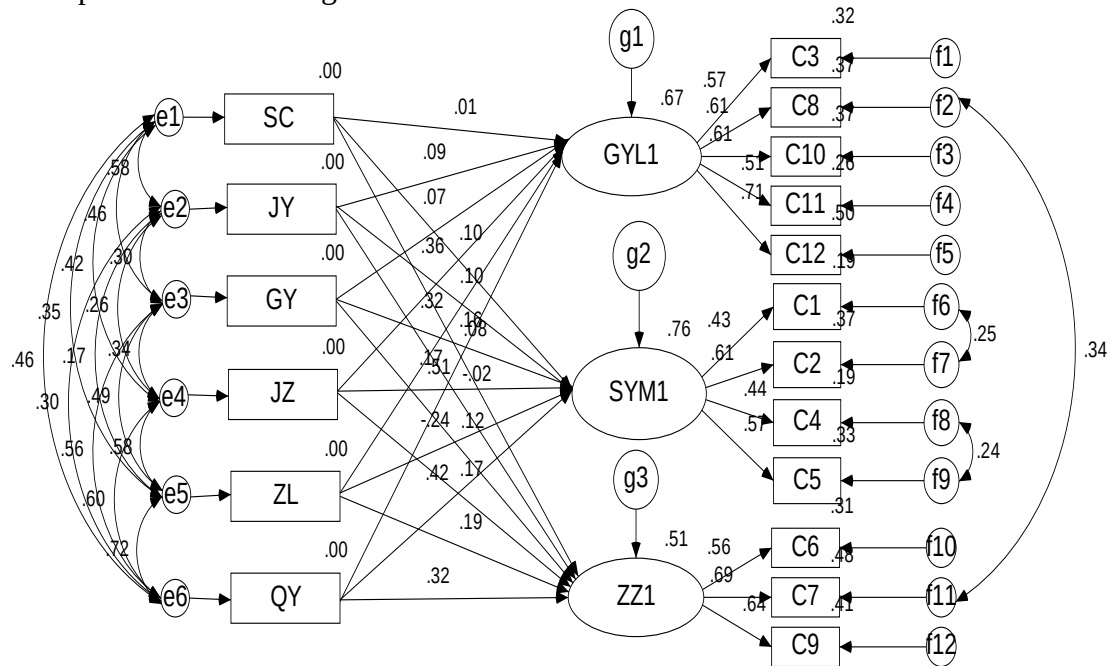


Figure 5- 6 The operational result of the corrected model of mixed path

Source: reorganized by author

The operational result validity of the corrected model of mixed path is tested according to the specific results as shown in Table 5-9.

Table 5- 9 the test results of the corrected model of mixed path

	Simple fit index			Absolute goodness fit index			Value fit index			
Index	PNFI	PGFI	χ^2/df	RMSEA	GFI	AGFI	NFI	IFI	TLI	CFI
Standard	>0.5	>0.5	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9
Model	0.577	0.544	1.212	0.042	0.904	0.840	0.857	0.972	0.96	0.97

Source: reorganized by author

As the above table shows, except that AGFI and NFI are slightly less than 0.9, all other indicators meet the statistical criteria, indicating that the model matches the original data well. This test proves that the operational result of the corrected model of mixed path in Figure 5-6 is reliable. Therefore, the result of the corrected model can be used for the final hypothesis test. The empirical results of the corrected model of mixed path in Figure 5-6 are summarized in Table 5-10.

Table 5- 10 the empirical results of the corrected mixed model

Research hypothesis		Empirical result (Beta)	Conclusion
H1: Business performance is positively related to strategic innovation	H1a: Business performance is positively related to organizational innovation	-0.021	No
	H1b: Business performance is positively related to supply chain management innovation	0.088	Yes
	H1c: Business performance is positively related to business model innovation	0.103	Yes
H2: Competitiveness is positively related to strategic innovation	H2a: Competitiveness is positively related to organizational innovation	0.175	Yes
	H2b: Competitiveness is positively related to supply chain management innovation	0.362	Yes
	H2c: Competitiveness is positively related to business model innovation	0.509	Yes
H3: Strategic flexibility is positively related to strategic innovation	H3a: Strategic flexibility is positively related to organizational innovation	0.193	Yes
	H3b: Strategic flexibility is positively related to supply chain management innovation	0.323	Yes
	H3c: Strategic flexibility is positively related to business model innovation	-0.235	No
H4: Market competition is positively related to strategic innovation	H4a: Market competition is positively related to organizational innovation	0.080	Yes
	H4b: Market competition is positively related to supply chain management innovation	0.005	Not significantly
	H4c: Market competition is positively related to business model innovation	0.105	Yes
H5: Enterprise cooperation is positively related to strategic innovation	H5a: Enterprise cooperation is positively related to organizational innovation	0.321	Yes
	H5b: Enterprise cooperation is positively related to supply chain management innovation	0.175	Yes
	H5c: Enterprise cooperation is positively related to business model innovation	0.424	Yes
H6: Supply chain management is positively related to strategic innovation	H6a: Supply chain management is positively related to organizational innovation	0.116	Yes
	H6b: Supply chain management is positively related to supply chain management innovation	0.068	Yes
	H6c: Supply chain management is positively related to business model innovation	0.156	Yes

Source: reorganized by author

5.4 Analysis of results

5.4.1 Discussions

Through reviewing the literature of strategic innovation from Chinese and foreign

scholars, our study examined the impacts of the six factors, namely market competition, business performance, supply chain, competitiveness, strategic flexibility and enterprise cooperation, on the organization innovation, supply chain innovation, business model innovation on a sample of IT trading companies located in Sichuan province, China. In addition, a theoretical model was established and empirically tested by structural equation approach.

From the empirical result of the corrected model of mixed path in Table 4-10, it was found that H1b、H1c、H2、H3a、H3b、H4a、H4c、H5、H6 are verified; H1a and H3c are not confirmed as the Beta coefficient of H4b is 0.005 is close to 0.

From the empirical analysis, we have found that H1 “Business performance has a positive impact on strategic innovation” is partially supported. The result that H1a is not supported suggests that business performance does not have a positive impact on organizational innovation. One possible explanation is that since organizational innovation is very complex, corporate business performance cannot much affect organization’s operational processes, practices and norms. In practice, we also found that corporate business performance is not closely related to the internal structure of organizations as most middle and high level management of IT trading companies state that the impact of business performance on the organization innovation is not significant. So, H1a is not supported. H1b and H1c are supported, which suggests that business performance has a positive impact on supply chain and business model innovation hinting that both supply chain and business model innovation are closely related to business performance. In practice, enterprise managers tend to focus more on these two types of innovations because business performance is a benchmark for both. When business performance gets better, the enterprise will increase the investment on the construction of supply chain and business model innovation. Likewise, when business performance is bad, the enterprise will make innovations in supply chain and business model.

In terms of competitiveness of enterprises, H2 is supported, indicating that competitiveness of enterprises has a positive impact on their strategic innovation, specifically, organizational innovation, business model innovation, and supply chain innovation. Competitiveness is a core capability of enterprises that is directly related to their survival and development. Corporate strategy formulation is based on the competitiveness of enterprises. So, it is easy to understand that competitiveness of enterprises has a positive impact on strategic innovation.

About the hypothesis of strategic flexibility having a positive impact on strategic innovation, H3 is partially supported. Specifically, H3a “strategic flexibility has a positive impact on organizational innovation” is supported. Strategic flexibility refers to an enterprise capability of making quick adjustments to deal with the external and internal environment changes in implementing strategies. In face of the environmental changes, the ability to quickly convert strategy can be very demanding to enterprises. It is difficult for organizations with too many procedural processes to adapt to changes in business strategy. H3b “Strategic flexibility has a positive impact on the supply chain innovation” is supported. In the whole supply chain of enterprises, suppliers, enterprises, and customers all participate in the business. The changes of strategy will make a certain degree of influence on suppliers and customers. H3c “strategic flexibility has a positive impact on business model innovation” is not supported. This may be because business model innovation mainly focuses on sales of products and it is therefore closely connected to the markets. However, strategic changes will first affect the production of enterprises and for IT trading enterprises, strategic changes are mainly related to product procurement and business management rather than product sales.

For the market competition, H4 “Market competition positively impacts on strategic innovation” is partially supported. In market-oriented competitions, the one who dominates the market takes an advantageous position. Market competition decides the future of enterprises. In particular, for IT trading companies, markets are the life. The intensity of market competition can influence the organizational innovation and business model innovation. In practice, the fiercer the market competition is, the more high executives want to win out. So, they will try every means to increase the market competitiveness through organizational innovation and business model innovation. It is easy to understand that H4a and H4c are supported. However, because supply chain innovation involves broader aspects and relate to the whole business process, market competition does not have a significant impact on supply chain innovation. From the empirical data, we can also find that the Beta coefficient is 0.005, which is close to 0, suggesting that there is no relationship between market competition and supply chain innovation so H4b is not supported.

H5 “Enterprises cooperation positively impacts on strategic innovation” is supported. For the purpose of resources complementation, enterprises need to cooperate at all levels. The parties of the cooperation will try to control the restructured organizations through the consultation on control right allocation. As a result, the cooperation between the enterprises will make some impacts on the original organizational structures. With the organization

restructuring, other aspects of the enterprises will change correspondingly, which produces some changes with the vendors and the business models after the business acquisitions and product innovations.

In terms of supply chain, H6 “Supply chain has a positive impact on strategic innovation” is supported. For trading enterprises, the profits and productivity of enterprises depend largely on whether their procurement departments are efficient. When each department takes its own procurement, it is easy to focus on the departmental interests. This indicates that the supply chain to certain degree has become a part of the core competitiveness of enterprises. To avoid these problems from happening, enterprises must reform and innovate their supply chains and business models at a strategic level.

5.4.2 Implications

This thesis focuses on IT trading enterprises and the driving forces of strategic innovation. From the empirical results, we have found that, in terms of the sampled IT companies, the competitiveness of enterprises, enterprise cooperation and supply chain management have positive influence on strategic innovation. Business performance has positive influence on supply chain management and business model innovation. Strategic flexibility exerts positive impact on organizational innovation and supply chain management innovation and market competition influences organizational innovation and business model innovation positively. For IT trading companies, the implications for enterprise management are as follows:

An enterprise's core competences are key to maintain sustainable competitive advantages, which are the source of long-term profitability of enterprises. Core competences determine the development scale and business scope of enterprises and are an important factor influencing the implementation of various strategies. The competitiveness of enterprises is the basic element for strategic innovation and has a strategic significance for the enterprise to obtain long-term competitive advantages. The success of enterprises now no longer depends on the products and the market structure of the industry they operate in, but rather on the prediction of the market trends and the quick response to changing customers' needs. For IT trading companies, which are relatively weak in technology, we suggest they can develop their core competence in terms of product portfolio, logistics, sales channels, marketing model, and after-sale services. In short, core competence will have a very important influence on the strategic innovation and create strong competitive advantages for enterprises.

Enterprise cooperation is a cooperative business model composed of two or more enterprises with common strategic interests (or specific departments). With the expected goal about the world market and the willingness to achieve overall business goals of the enterprises, the parties involved in the enterprise cooperation jointly develop or own the market and use the resources to strengthen their competitive advantages. Enterprise cooperation can be formed through various agreements or contracts to make a complementary, risk-sharing, horizontally bilateral or multilateral production of elements and a loosely organized entity. Such kind of cooperation can achieve a powerful combination in order to ensure a long-term co-existence and sustainable enterprise development.

Supply chain management is important not only to maintain the current value of the enterprise, but also to create new value. In the environment of supply chain management, competition among enterprises have transformed into the competitions of supply chain. Through effective supply chain management, the resources of the whole supply chain can be allocated in an optimal and coordinated way in order to maximize the output and efficiency of supply chains.

Therefore, through the innovation of supply chain management, new approaches and ideas in supply chain management will be found so that strategic advantages and profit margins needed for improving the core competence of the entire supply chain can be obtained. Obviously, supply chain has become an important factor influencing strategic innovation. Hence, for IT trading companies, it is very important to improve the supply chain management by controlling the enterprise information flow, logistics, and capital flow; in particular, it is very necessary to control clients' information and capitals. Meanwhile, attention needs to be paid to the construction of sales network and to maintain good relations with the suppliers and customers.

The hypothesis, "business performance, strategic flexibility and market competition have a positive impact on strategic innovation", is partially supported. As business performance has a positive impact on supply chain and business model innovation, the result suggests that more investment can make greater influence on supply chain and business model innovation. In terms of strategic flexibility, enterprises should be prudent with strategy formulation. With the changing environment, enterprises should leave more room for the change of strategy, by which strategic flexibility can promote organizational and supply chain innovation. Market competition, as an external factor to the enterprise, can have an impact on organizational innovation and business model innovation. The fiercer the competition is, the more

enterprises conduct organizational and business model innovation. It is true that enterprises cannot determine market competition, but they can choose the competitive environment for their survival. So, enterprises should strive to place themselves in a stronger competitive environment in order to unleash their potentials fully.

Chapter 6: A Case Study of Jin Guan Tong Li Company (JGTL)

To further verify the results of the survey, this chapter will conduct a case study with Jin Guan Tong Li Company (JGTL), an IT trade company located in Chengdu, Sichuan province. The Chapter first gives a brief introduction of the company, and then describes its development, and finally analyzes how the driving forces influence its strategic innovation.

6.1 The Overview of JGTL

JGTL System Integration Co., Ltd. was established in 1998, mainly engaged in the construction of computer network, digital surveillance, systems integration, in selling hardware and software products that are internationally or domestically famous, and in providing technology service. The company enjoys advanced information processing technology and rich experience in solving large-scale computer network integration. It sells IBM servers, minicomputers, storage, software, and it is also a key distributor of Lenovo Thinkpad notebook, desktop computers and a strategic partner in terms of IBM value-added services.

The company serves as a computer retailer of the government procurement for Chengdu and secondary cities in Sichuan province. Currently, it has five IBM Lenovo specialized retail outlets located in all major computer stores in Chengdu. Since 2002, the company has been appointed as “the designated supplier for Sichuan provincial government procurement”, “the designated suppliers for Chengdu Municipal government procurement”, “the designated supplier for Chinese central government procurement”, “the designated supplier for Chengdu Military Region”, and “the contracted supplier for Sichuan Branch of People’s Bank of China”. It was also appointed as the agent of all-range IBM and Lenovo products.

With many years of customer service experience, the company has created the motto “customer-interests-centered, technology-and-service-based”, and has thrived to provide the best services to customers, continuously improving its service quality. The company provides high quality services for the government, military, financial institutions, insurance companies, health-care organizations, media, auto-makers and dealers.

6.2 JGTL's Development

At the beginning, with four employees, JGTL owned a shop of 40 square meters and the initial fund of 30,000 RMB (4,500 Euro). Nowadays, it has developed into a leading company of IT industry in the Chengdu market. Its sales have reached one hundred million RMB (14 million Euro), it now employs two hundred people and enjoys a high reputation in the IT industry.

JGTL's development has gone through several stages in accordance with its strategic innovation:

6.2.1 Stage One: the Entrepreneurial Period: 1998 – 2001

In 1998, the founder of JGTL Group realized the huge market potential of the IT industry, so with three college classmates and an initial fund of 30,000 RMB (4,500 Euro), built up a shop and started their entrepreneurial journey. They named the company Chengdu Dingzhi Science and Technology Development Co. Limited. Being sensitive about market opportunities, they believed that laptop computers would be very popular and sell well in the future. So they intended to work on the marketing strategy of selling laptops, which was to distinguish laptop from desktop computers and thus the first laptop supermarket in Chengdu - Dingzhi laptop supermarket was opened.

1) The Driving Forces of Strategic Innovation

(1) Business performance:

In 2000, JGTL developed very quickly and its monthly gross profit reached 90,000 RMB (13,500Euro) and made a profit of 500,000 RMB (73,500 Euro) in six months, which was considered a large amount of money in 2000 and laid a solid foundation for the development of JGTL.

The profit obtained by the company was “the first barrel of gold”, which laid the foundation for its future development.

(2) Competitiveness: Laptop supermarket was first introduced by JGTL in the sales of computers in the Chengdu market, which at that time required an innovation in marketing.

(3) Strategic flexibility: In 2000, JGTL noticed the change in customers' needs and singled out laptop among various computer products and opened the first laptop supermarket in Chengdu. It also started to collaborate with many internationally famous laptop producers

and enjoyed a variety of laptop brands.

(4) Market competition:

Market competition: Until 1990s, the Chinese laptop market was dominated by foreign products, as for example, Toshiba, IBM and HP. Chinese computer manufacturers were not capable of doing effective research and development so they were trapped in seeking help from foreign companies and Lenovo was one of them. But Chinese computer producers adopted a low-cost strategy and finally survived the competitive market. With the development of Chinese laptop products, a three-pillar structure of Chinese, American and Japanese computers emerged. But still there was not any trading company, which was solely involved in the sales of laptop so the potential of the market was very promising.

(5) Supply chain:

Supply chain management: At the beginning of the foundation of the company, to gain more popularity, JGTL collaborated with many companies of laptops, for example, IBM, HP, and Winbook. JGTL then established a healthy cooperative relationship with upstream suppliers and, at that time the key of the supply chain was the upstream supplier.

(6) Enterprise cooperation:

Enterprise cooperation: At the entrepreneurial period, to lower the risks of business as well as to learn from successful companies, JGTL cooperated with many famous laptop manufacturers.

(7) Strategic Innovation

Strategic innovation in this stage was mainly demonstrated in the following aspects:

(1) Organizational innovation: “People-centered management” and “consistent learning and innovation” is the JGTL’s motto. Two salesmen who had not received much education made their efforts to study and later made the deputy general managers of the company. The general manager himself often did staff training; in addition to some business knowledge and sales skills, he also taught the employees methods of solving problems in life and how to improve their tastes. Walking into JGTL Company, we can see tea sets everywhere and tea culture is very popular in the company. When enjoying tea, the staff can communicate with each other, exchange ideas and learn from each other.

(2) Business model innovation:

In 2000, there was no specialized laptop computer supermarket in Chengdu. A specialized laptop supermarket, as an innovative business model, triggered strong reactions in

the market. Due to their business success, many laptop computer manufacturers showed their interests in JGTL, and even the New Century Computer City (which was a very famous and prestigious shopping center for computer products at that time) came to seek for opportunities of cooperation with the company, which resulted in the establishment of a chain store of laptops in the New Century Computer City. In a word, at that time the purpose of the business model innovation of the company was to survive in the market.

(3) Supply chain Innovation:

In 2000, JGTL had established partnerships with a number of internationally renowned laptop manufacturers and introduced accessories to the laptop computer supermarkets, such as laptop bags, laptop keyboards and so on. The company focused on product quality, sales support and staff training, and effective communication with suppliers.

6.2.2 Development Stage (2001-2010)

In 2001, the company changed its name to Chengdu JGTL Co., Ltd. in line with its development. Since selling computers was a profitable industry, the competition was very intense. Just when their business was in full swing, the competitors also grew rapidly. Faced by fierce competition, the company secured its position by integrating its own resources and conducting a series of reforms, including restructuring personnel and strategic objectives. First, it closed its first laptop supermarket to save resources, and focused on the New Century Computer City supermarket. Secondly, with extra staff, it set up a “management office”, dedicated to after sales service and customer service. Meanwhile, it selected the most outstanding staff to be responsible for retailing. Thirdly, the company strengthened its position in the market. At the very beginning, they were the agents of a variety of products, but then decided to focus on the agent of IBM products in order to establish a clear image among the customers that they were the sole agent of IBM. By this way, they built a professional image of their company and also built up customers’ confidence in them. This strategy changed the previous image and allowed them to improve services and staff quality. The staff treated the customers warmly and thoughtfully. Any customers who came to their store were received with great hospitality and were recommended the products they looked for. Consumers not only trusted the staff very much, but also gave them high praise. JGTL’s business was revitalized.

1) The Driving Forces for Strategic Innovation

At this stage, the driving forces for strategic innovation are mainly as follows:

(1) Business performance: After several years of development, the sales of the company reached 200 million RMB (29,5 million Euro) and its profit margin was over ten million. The company has been awarded many honors over the years. Between 2002 and 2008, IBM consecutively awarded the company's store the "Best Interaction Center" and "Trustworthy Store" awards. It was also awarded "The 2005 IBM Southern Region Government Procurement Excellent Dealers" in January 2006. In March 2007, it was awarded "Lenovo International 5 years Thinkpad Achievement Award". In July 2007, the company was ranked sixth among the 5,000 desktop computer distributors in China. It was selected as one of the 100 best sale plans among top 500 Chinese computer dealers in January 2008 and was awarded by "Lenovo International Gold Annual Sales Channels" in 2011.

(2) Competitiveness: From the very beginning, the company was the agent of a variety of products, and later it became the sole agent for IBM products. Focusing on selling the world's top laptop computers enhanced the company's professional image among customers.

(3) Strategic flexibility: The customers' needs were beyond the products, and JGTL introduced an effective after-sales service system so as to obtain a unique competitive advantage. During the process of the company's development, JGTL gradually established the image of being tightly tied up with IBM while developing its own business and gaining significant competitive advantages.

(4) Market competition: In 2001, China's laptop computer market maintained a high growth rate and annual sales almost reached 700,000 units, according to the newspaper of *Computer World*. In the following years, the growth rate would remain above 30%. Huge market opportunities and high expectations on the market potential led to fierce competition in this industry and both foreign and domestic laptop computer manufacturers flocked to mainland China to fight for the great market potential. Because Chinese laptop computer market was developing rapidly during that period, the prospects of this industry were very attractive. Many competitors were aware of this potential market, and launched a series of business "battles". JGTL's business model had been upgraded from the previous "seeking for survival" to "winning out of the competition". JGTL, through its innovative marketing strategy, complete after-sale services and good reputation, won in the bidding for government procurement contractor and established stable business relationship with the government.

(5) Supply chain: Thanks to JGTL's reputation in the industry and in the region, many laptop manufacturers consistently showed their intention to cooperate with JGTL and wanted to cooperate with them, which was very attractive to the company. However, JGTL declined

others' proposals, and still insisted on being the agent of IBM products. JGTL built a good partnership with IBM, the upstream dealer.

(6) Enterprise cooperation: In addition to establishing a good relationship with IBM products supplier, the company also set up a cooperative relationship with the government. Since 2002, the company has been designated as the agent of IBM full range of products and Lenovo International Think products. It was known as "the designated supplier for Sichuan provincial government procurement", "the designated supplier for Chengdu government procurement", "the designated supplier for central government procurement" and "the designated supplier for Chengdu Military Region".

2) Strategic Innovation

Strategic innovation in this stage is mainly shown in the following aspects:

(1) Organizational innovation: JGTL was relatively small before and the responsibilities of the staff were not clearly identified, and sometimes their responsibilities were overlapped. Along with the expanding of the company, the previous organizational structure was not suitable for the development of the company. At this stage, JGTL made timely adjustment in its organizational structure: electing some outstanding employees to be responsible for retail work, and asking the other staff to set up a "management office", which was dedicated to after-sales service.

(2) Business model innovation: When other companies chose to be the agents of various brands of laptop computers, JGTL Group only focused on IBM brand and decisively gave up other laptop computers. The IBM brand and the company's image were firmly tied together, and whenever mentioning about IBM laptop computer, people would immediately think of JGTL Group. As an IBM agent, the company had been very professional and it accurately identified its own position. Shifting from diversity strategy to the centralized strategy, the company could easily find the target customers, increase its attractiveness to customers, and enhance its own core competitiveness.

(3) Supply Chain innovation: When every company was trying to promote the sales, JGTL focused on maintaining customer relationships. Many customers became very reliable friends of the company. With the friendly relationship, the company could easily understand customer needs; meanwhile, the customers could help to access larger markets, for instance, they could introduce JGTL to their industries. Good after-sales service won the customers' recognition and brought success to the business.

In addition, JGTL had won the trust of the consumers, and established a good relationship with downstream customers.

6.3 The Impact of the Driving Forces on Strategic Innovation

From the two stages of the development of JGTL, strategic innovation can be illustrated in three aspects, such as business model innovation, organizational innovation and supply chain innovation. The driving forces of strategic innovation are composed of internal factors, such as business performance, enterprise competitiveness, strategic flexibility; and external factors, such as market competition, supply chain management, and enterprise co-operation. The analysis of the impact of the driving forces of strategic innovation on strategic innovation is as follows:

6.3.1 The Impact of Strategic Flexibility on Strategic Innovation

(1) Start-up stage

For Hypothesis 3: Strategic flexibility of the company has an impact on strategic innovation. Strategic flexibility has a positive impact on organization innovation and supply chain management innovation. The company's founders were very sharp in identifying the consumers' demands and the market trends, and thus they adopted the sales strategy of the laptop computers at the proper time. Their strategy had a positive impact on the innovation of supply chain and organizational innovation. In order to implement this strategy, the company executives cooperated with major laptop computer manufacturers and in order to continue to implement the strategy of the company, the executives built a learning organization culture to ensure company's innovation soft strength. Hence, there is a match between the survey results and the case study analysis in what concerns hypotheses 3a and 3b are verified.

(2) Development stage

For hypothesis 3: During the development period, the company's strategy has to be adjusted constantly from product-centered strategy to service transformation strategy, which fully demonstrated the company's strategic flexibility. This strategic transformation had some impacts on the company's organization and supply chain innovation. In order to strengthen the implementation of the company's service strategy, the company established after-sale service department, through which, the company could offer better service to the consumers. Meanwhile, the company voluntarily extended the supply chain to the consumers, tried to

understand the customers' needs in a timely manner and to provide better services for the customers. JGTL has established a professional image among the consumers. Also in this case there is a match between the survey results of hypotheses 3a and 3b and the case study.

6.3.2 The Impact of Competitiveness on Strategic Innovation

(1) Start-up stage

For hypothesis H2: Competitiveness has a positive impact on strategic innovation. Because JGTL seized the market niche and introduced laptop computer sales to the supermarket, the company developed its core competence, which had a significant and positive effect on the company's strategic innovation. In order to maintain its competitiveness, JGTL continued to carry out organizational innovation and business model innovation and supply chain innovation and established learning organization, which was beneficial to innovation. JGTL established strategic alliances with suppliers to maintain good relations of cooperation. Because JGTL Group tried to maintain good relationship with its suppliers, they tended to conduct supply chain management innovation. The company's cooperation with well-known international companies could broaden the company's horizon and help to improve its business model innovation. Therefore, as to the survey results, hypothesis 2 was further verified.

(2) Development stage

For hypothesis 2: Competitiveness has a positive impact on strategic innovation. Because the consumers knew that JGTL solely represented IBM, they were very confident in them. The company focused on IBMs product and offered better and all-round services, which has been recognized by customers and government. The company's strategic enterprise cooperation innovation produced a significant positive effect. This specialized sales strategy has created competitive advantages to the company. Compared with the strategy of selling multi-brand laptops in the past, the competitiveness of this specialization strategy adopted by JGTL gained the trust from the consumers and had a significant influence on the strategic innovation of the company. In order to develop its competitiveness, the company set up a specialized service sector and deepened the cooperation with IBM, which promoted the company's business model and its sales strategy.

6.3.3 The Impact of Business Performance on Strategic Innovation

(1) Start-up stage

For hypothesis 1: Business performance has positive impact on strategic innovation. To be exact, business performance has positive impact on supply chain innovation and business model innovation. After JGTL had been established for a while, it obtained the returns and its performance was very impressive. Then the company executives worked out a plan of long-term development and have increased their investment in order to promote the company's business performance. Because the company was a small-sized enterprise, it invested in supply chain innovation, business model innovation, but not in organizational innovation. Therefore, the hypothesis that business performance has positive impact on organizational innovation was not verified in the case study. More precisely, H1b and H1c were verified but H1a was not verified.

(2) Development stage

For hypothesis 1: Business performance has a positive impact on strategic innovation. Because JGTL kept adjusting its strategy, the company made great achievements in business performance. The company executives still had a long-term development plan, consisting of increasing their investment in organizational reform, in supply chain construction as well as in the development of innovative business models. However, the impact of organizational innovation on the company's business performance was not obvious; therefore, and in accordance with the survey results, it has not been verified that business performance has a positive effect on organizational innovation, i.e., H1b and H1c were verified and H1a was not verified.

6.3.4 The Impact of Supply Chain on Strategic Innovation

(1) Start-up stage

For Hypothesis 6: Supply chain innovation has a positive effect on strategic innovation. The supply chain of JGTL did not only refer to the cooperation with suppliers, but also the whole process of selling the products. The sales of laptop computers are the innovation of supply chain that achieved the differentiation of computer products, which was a special competitive advantage for the company. In order to ensure this advantage, the company cooperated with suppliers and consumers in a creative way. This kind of cooperation can promote the innovation of supply chain significantly.

(2) Development stage

For Hypothesis 6: Supply chain innovation has a positive effect on strategic innovation. JGTL's supply chain in the development period was comprehensive including building trust

with customers and important clients, for example, the government. The customer-centered business strategy was very effective. To maintain the complicated supply chain, the company needed to conduct innovation in organizational strategy and clarified the details in organizational structure. At the same time, they innovated in business model and adopted specialized sales strategy. Supply chain innovation was also carried out to manage suppliers, the government and consumers.

6.3.5 The Impact of Market Competition on Strategic Innovation

(1) Start-up stage

For hypothesis 4: Market competition has a positive impact on strategic innovation. During the start-up period, market competition happened among the manufacturers of laptop computer while the competition among the sales end did not attract enough attention. JGTL realized the market potential, conducted business model innovation and started to focus on the sales of laptop computers. To maintain this competitive advantage, they improved the organizational soft strength.

(2) Development stage

For hypothesis 4: Market competition has a positive impact on strategic innovation. During this period, JGTL almost had no competitors but their business models were copied by other companies. To address this issue, JGTL conducted various innovations in business model and in supply chain management. Therefore, the hypothesis that market competition can influence the innovation of organization and business model positively is also confirmed in this case.

6.3.6 Enterprise Cooperation and Strategic Innovation

(1) Start-up stage

For hypothesis 5, enterprise cooperation has a positive impact on strategic innovation. JGTL and the suppliers have set up strong cooperative relationship, which demanded organization innovation in JGTL. An office, under the leadership of procurement department, was established just for communicating with suppliers and providing the suppliers with customers' feedback. Meanwhile, the company was committed to building a harmonious and friendly culture, which has benefited the company. To maintain the strong bond between JGTL and the suppliers, JGTL has made every effort to improve its management, which has broadened its horizon.

(2) Development stage

For hypothesis 5, “Enterprise cooperation has a positive impact on strategic innovation”, in terms of enterprise collaboration, JGTL collaborated with the top laptop supplier IBM and the government. This kind of collaboration called for innovation in supply chain management so they attached great importance to their relationship with customers and the government. JGTL lifted its own business image through focusing on one internationally well-known supplier.

Chapter 7: Conclusions

This chapter summarizes the whole study and explores its limitations as well as provides some suggestions for further study.

7.1 Conclusions

Based on our findings, the conclusions of this study are as follows:

(1) Strategic flexibility can impact organization innovation and supply chain management innovation positively but does not have an impact on business model innovation. To achieve strategic flexibility, it is important to leave space for making adjustments. Being faced by the changing environment, the flexibility of a company's strategy can promote the organizational innovation and supply chain management innovation.

(2) Competitiveness has a positive impact on strategic innovation. The competitiveness of an enterprise refers to its core competence, which is the foundation of an enterprise's dynamic competitive advantage as well as the source of profit. This kind of core competence determines the development and operation of an enterprise and can affect the implementation of all kinds of strategies. Therefore, the competitiveness of an enterprise is essential to strategic innovation and is strategically significant for an enterprise to obtain long-term competitive advantage.

(3) Business performance has positive impact on supply chain management and business model innovation but not on organization innovation. Business performance means investment of resources – the more investment, the more impact on the innovation of supply chain management and business model.

(4) Supply chain management can have positive effects on strategic innovation. The competition of supply chain management has become the new trend of enterprise competition. For IT trading companies, it can benefit the company's strategic innovation to strengthen its own supply chain management, to highlight the control of information flow, logistics and funds flow, to maintain the cooperation between suppliers and consumers.

(5) Market competition has positive effects on organization innovation and business model innovation but has no positive effects on supply chain management innovation. The

more competitive the market is, the more the companies tend to innovate in organization and business model and the more importance they will attach to the needs of their customers. So to unleash their own potential, enterprises may benefit from being in a competitive market.

(6) Enterprise cooperation has positive effects on strategic innovation. The collaboration between enterprises can maintain their stability and consistent development. As the global competition is getting fiercer and fiercer, the enterprises tend to collaborate with each other rather than pure competition and the competitive advantage of an enterprise is created through combining their own advantages and other enterprises' strengths. The strategy of an enterprise focuses on the new cycle of development and creating new values based on the principal of mutual benefit rather than rivalry and competition. Therefore, for the IT trading companies, collaborating with technology enterprises can strengthen the companies' competence and can also benefit their strategic innovation.

7.2 Limitations

The main limitations of this study are as follows:

(1) The research perspectives are not broad enough and it has only covered three strategic innovations: organizational innovation, supply management innovation and business model innovation and six driving forces: market competition, business performance, supply chain management, competitiveness, strategic innovation and enterprise cooperation. Further studies should identify more driving forces for strategic innovation.

(2) Due to the limitation of time and cost, this study has not covered other factors, such as national policy or social economic development.

(3) In terms of selecting the sample, the number of companies surveyed is limited and they are only from Chengdu city so the quality of the sample needs to be improved and extended to other places in China.

(4) Five points Likert scaling was adopted in this study, which is reliable and valid. However, subjective constructs, such as entrepreneurship, market performance and strategic flexibility cannot be evaluated by a Likert scale, which may somewhat reduce the reliability and validity of this study.

7.3 Suggestions for Further Studies

The suggestions for further studies are as follows:

(1) The research perspectives should be broadened and the studies on the driving forces of strategic innovation should be deepened. The research models can be enriched and more important factors should be identified in further studies; therefore, findings that are beneficial to enterprises can be drawn. At the same time, further study on the mechanism of driving forces of strategic innovation influencing strategic innovation should be conducted.

(2) In terms of data collection, the data covering a wider range of enterprises should be collected to improve the reliability and validity of the study. As for the questionnaires, more details about the enterprises should be obtained and high-level executives should be considered for sampling.

(3) The latest international and Chinese literature should be reviewed before choosing the variables. At the same time, the study is rooted in the Chinese context so that objective criteria need to be observed to ensure the accuracy of the study.

Bibliography

- Abbott & Banerji (2003). Opening Van Zaken: Beleid Voor, Open Innovation (Opening up: Policy for Open Innovation), *Advisory Council for Science and Technology*, Den Haag, The Netherlands.
- Agarwal, R., Angst, C.M and Magni, M. (2009), "The Performance Effects of Coaching: A Multi-level Investigation using Hierarchical Linear Modeling," *International Journal of Human Resource Management*, Vol. 20, No. 10, 2110-2134
- Aghion, P., Harris, C. and Vickers, J. (1997), Competition and Growth with Step-by-step Innovation: An example, *European Economic Review*, (41):771-782.
- Aker & Mascarenhas (1984). *Competence based competition*, New York: John Wiley & Sons.
- Andrew, M. Pettigrew, (1990), Longitudinal Field Research on Change: Theory and Practice, *Organization Science*, 1(3):267-292.
- Andrews, K. (1971), *The Concept of Corporate Strategy*, Homewood, IL: Dow Jones-Irwin.
- Anjana, K. (2004), Strategic Management, Core Competence and Flexibility: Learning Issues for Select Pharmaceutical Organizations, *Global Journal of Flexible Systems Management*, 5(4):1-15.
- Ansoff (1965), Real options and its platform adoption: Implications for theory and practice, *Information Systems Research*, 15(2), 132-154.
- Ansoff, H.I. (1956), *Corporate Strategy*, New York: McGraw Hill.
- Antonio, J. and Verdu-Jover (2005), Flexibility, Fit and Innovative Capacity: An Empirical Examination, *International Journal of Technology Management*, 30(1):131-146.
- Arrow (1962), The Economic Implications of Learning by Doing, *The Review of Economic Studies*, 29(3):155-173.
- Bai Ming and Li Guozhang (2006), Market Competition and Innovation: Schumpeter's Hypothesis and Its Empirical Verification, *China Soft Science Magazine*, (11): 15-21.
- Barney J. (1991), Firm Resources and Sustained Competitive Advantage, *Journal of Management*, (17): 99-120.
- Barringer, B.R. and Bluedorn, A.C. (1999), The Relationship Between Corporate Entrepreneurship and Strategic Management, *Strategic Management*, (20):421-444.
- Berends, H., Bijh, D. and Debackere, K. (2006), Knowledge sharing mechanisms in industrial research, *R & D Management*, 36(1):85 - 95.
- Cai Taihua, Chen Guohong and Xiang Xiaodong (2010), Game Analysis of Cluster Supply Chain Technological Innovation, *Chinese Journal of Management Science*, (1):72-77.
- Chandler, A.D. (1962), *Strategy and Structure*, Cambridge, M A: MIT Press.
- Chen Guang (1994), Study on Technological and Organization innovation, *Science of Science and Management of S.&T.*, (9):22-25.
- Chen Guoquan (1999), Supply Chain Management, *China Soft Science Magazine*, 3:101-104.

- Chen Litian (2012), A Study on the Relationship Between the Effects of the Organizational Innovative Climate and Those of Motivational Preference on Employees' Innovative Behavior, *Science of Science and Management of S.&T.*, 33(06):60-70.
- Chesbrough, H., Richard, S. and Rosenbloom (2001), The Role of the Business Model in Capturing Value from Innovation: Evidence from Xerox Corporation's Technology Spinoff Companies, *Harvard Business School*, p7-23.
- Deng Yun (2005), Study on the Development of Supply Chain Management Researches , *Modern Management Science*, (4):23-24.
- Ding,N., Zhao,L., Wang,Z. and Liu,W.J. (2009), The Trend of Enterprise Business Model Development-Business Ecosystem, *China-USA Business Review*, Vol8, p.18-22
- Dong Anbang (2002), Research Overview of Supply Chain Management, *Industrial Engineering*, 5(5):16-20.
- Dou Lifu (1995), Strategies on Organization's Efficiency Change, *Studies in Science of Science*, 13(2):74-76.
- Du Gang (2005), The level of core competence - the structure and dimensions of the Judgment Model, *Science of Science and Management of S.&T.*, (1):48-53.
- Dyer, J.H. and Singh, H. (1998), The Relational View: Cooperative Strategy and Sources of Inter-Organizational Advantage, *Academy of Management Review*, (23):660-679.
- Eisenhardt, K.M (1989), Building Theories from Case Study Research, *Academy of Management Review*, 14(4):532-550.
- Fleury, L., Tereza,M., Fleury,C. and Carlos, A. (2005), In search of Competence: Aligning Strategy and Competences in the Telecommunications Industry, *International Journal of Human Resource Management*,16 (9):1640-1655.
- Freeman, C. (1982), *The Economies of Industrial Innovation*, The MIT Press.
- Fu Jiaji (1992),*Technological Innovation* , Beijing: China Machine Press,65-67.
- Fu Jiaji (1998), *Technological Innovation* , Beijing: Tsinghua University Press,65-67
- Gilbert and Cvsa (2003), Strategic Commitment to Price to Stimulate Downstream Innovation In a Supply Chain, *European Journal of Operational Research*, 150(3) : 617 - 639.
- Gordijn, J. (2002), *Value-based Requirements Engineering—Exploring Innovative e-Commerce Ideas*, Vrije University, Amsterdam,
- Hagedoorn, J. (1993), Understanding the Rationale of Strategic Technology Partnering: Inter-organizational Modes of Cooperation and Sectoral Differences, *Strategic Management Journal*, 14(5): 371-385.
- Hamel, G. and Prahalad, C.K. (1998), *Competing for the Future*, Translated by Wang Zhenxi, Kunlun Press.
- Harrigan (1985), Markets for technology and their implications for corporate strategy, *Industrial and Corporate Change*, p. 10,419–450.
- Harrigan (2001), Licensing tacit knowledge: intellectual property rights and the market for know-how, *Economics of Innovation and New Technology*.4 (1), 41-59.
- He Yuetong and Lu Yanqiu (2011), Analysis of the Influence of Strategic Flexibility on Enterprise Innovation, *Science Research Management*, 32(10):10-17.

- Hitt, M.A, Ireland, R.D., Camp, S.M. and Sexton, D.L. (2001), Strategic Entrepreneurship, Entrepreneurial Strategies for Wealth Creation, *Strategic Management Journal*, (22):479-491.
- Hitt, M.A. (1998), Differential potency of factors affecting innovation performance in manufacturing and services firms in Australia, *Journal of Product Innovation Management*, 13,35–52.
- Huff, J.O., Huff, A.O. and Thomas, H.(1992), Strategic Renewal and the Interaction of Cumulative Stress and Inertia, *Strategic Management Journal*, 13, Special Issue, 55-75.
- James, F. and Moore (1996), “Predators and Prey: A New Ecology of Competition.” *Harvard Business Review*, p: 75-86;
- Jiang Wei and Ye Xuefeng (2001), The cultivation and promotion of core competencies based on AHP. *Science of Science and Management of S.&T.* ,(6):86-93.
- Johnson, L., Saini, G. and Ondernemen, K. (2003), *Structuur en Ontwikkel- ing van het Nederlandse MKB* (Small Firms in the Netherlands: Structure and Development of the Dutch Business Society), EIM, Zoetermeer, The Netherlands.
- Kang Rongping (2001), *New Strategic Trend of Large Multinationals*, Beijing: Economic Science Press,
- Kang Rongping and Ke Yinbin (2001), Growth, Strategy and Core Competence of Galanz, *Management World*, (1):189-195.
- Katsuhiko, S. and Hitt, M.A.(2004), Strategic Flexibility: Organizational Preparedness to Reverse Ineffective Strategic Decisions , *Academy of Management Executive*, 18: 44-59.
- Kim,W.C. (1999), Strategy, Value, Innovation, and the Knowledge Economy, *Sloan Management Review*, (spring), 41-54.
- Kline, R.B. (2011), *Principles and practice of structural equation modeling (3rd ed.)*. New York: The Guilford Press.
- Knecht, F. and Friedli, T. (2002), *Wege zur Intelligenten Positionierung Von Industrielieferanten* , University de Lausanne.
- Lee, S.M., Olson, D.L. and Trimi, S. (2010), The Impact of Convergence on Organizational Innovation, *Organizational Dynamics*, 39(3): 218-225.
- Li Haiyang (2001), Product Innovation Strategy and the Performance of New Technology Ventures in China, *Academy of Management Journal*, Vol. 44, p.1123-1134
- Li Ye, Li Chuanzhao and Luo Wanyi (2005), Strategic Innovation, Business Transformation and the Sustained Development of Private Enterprises, *Management World*, (6):126-135.
- Linder, J. and Cantrell, S. (2000), Changing Business Models: Surveying the Landscape, *Accenture Institute for Strategic Change*.
- Liu Chunling, Guojun, Li Jizi and Yuanlin (2011), Technological Innovation Model and Evolution Pathway in Cluster Supply Chain Under Horizontal Cooperation—The Case of Haitian & Haitai in Ningbo of Zhejiang Province, *R&D Management*, 23(5):56-63.
- Liu Jiangting (2009), *Diffusion Model Research on the Green Supply Chain Management of Manufacturing enterprises*, Dalian University of Technology,
- Liu Yang and Chen Chunming (2008), Service Outsourcing and Organizational Innovation , *Academic Exchanges*, (4):76-79.
- Liu Yun and Shi Jintao (2009), Study on the Interaction Between Organization’s Innovation

- Atmosphere and Motivation Preferences and Employee's Innovative Behavior, *Management World*, (10):88 -112.
- Luo Ling and Diao Zhaofeng (2007), Study on the Mechanism for Enterprise's Strategic Innovation , *Journal of Wu Han University of Technology (Information and Management Engineering)*, (8):50.
- Luo Wei and Tang Yuanhu (2001), Reasons and Motivations of Cooperation Innovation Between Enterprises, *Studies in Science of Science*, Vol.19, No.3:91-95.
- Ma Shihua, Wang Yifan and Lin Yong (1998), Supply Chain Management Challenges Traditional Manufacturing Mode, *Journal of Huazhong University of Science and Technology (Social Science)*, (2) : 65-68.
- Mansfield, E. (1984), R&D and Innovation: Some Empirical Finding in Zvi Greliches (eds.), *R&D, Patents and Productivity*. University of Chicago Press, 127-154.
- Markides, C. (1997), Strategic Innovation, *Sloan Management Review*, 38(3),9-23.
- Markides, C. (1998), Strategic Innovation in Established Companies, *Sloan Management Review*, 39(3):31-42.
- Matthyssens, Pauwels & Vandenbempt (2005), Proximity and innovation: a critical assessment, *Regional Studies*,39 (1),61–74.
- Michael, E. and Porter (1997), *Competitive Strategy*, Translated by Chen Xiaoyue. Beijing: Hua Xia Publishing House,2-32.
- Michael, L. (2005), Competence. Blackwell *Encyclopedic Dictionary of Operations Management*, p1-42, 40.
- Michael, M., Schindehutte, M. and Allen, J.(2003), The Entrepreneur's Business Model: Toward a Unified Perspective, *Journal of Business Research*, 58(1): 726-735.
- Miller, D.(1996), Configurations revisited. *Strategic Management Journal*.
- Mintzberg, H. and Westley, F. (1992) Cycles of organizational change, *Strategic Management Journal*, 13:39-59.
- Mintzberg, H., Ahlstrand, B. and Lampel, J. (2002), *A guided tour through the wilds of strategic management*, Beijing: China Machine Press.
- Mooney, A. (2007), Core Competence, Distinctive Competence, and Competitive Advantage: What Is the Difference? *Journal of Education for Business*, 83(2):110-115.
- Morishima (1985), *Why has Japan 'succeeded'?* Cambridge University Press.
- North, D.C.(1995), "Five Propositions about Institutional Change," in *Explaining Social Institutions*, Jack Knight and Itai Sened, eds., University of Michigan Press, pp. 15-26.
- OECD(1993), *Technological Innovation Statistics Handbook*, China Financial & Economic Publishing House,
- OECD(1997), *National Innovation Systems*, Paris: OECD.
- Osterwalder, A. (2004), *The Business Model Ontology-a Proposition in a Design Science Approach* , University de Lausanne.
- Ouyang Xinnian(2004), Driving Force of Enterprise's Technological Innovation and Interest Motivation Mechanism , *Scientific Management Research*, (3): 21-25.
- Peter, D.(1988), The Coming of the New Organization, *Business Review*, 66(1):45-55.

- Petit, M.L. and Sanna-Randaccio, F.(2000), Endogenous R&D and Foreign Direct Investment in International Oligopolies, *International Journal of Industrial Organization*, (18): 339-367.
- Petrovic,O. and Teksten,K.(2001), Developing Business Models for e-Business, *International Conference on Electronic Commerce*, October31-November 4, Vienna, Austria.
- Piore and Sabel(1984),The theory and practice of corporate finance:Evidence from the field, *Journal of Financial Economics*, 60, 187–243.
- Plowman, D. A., Baker, L., Beck, T., Kulkarni, M., Solansky, S., and Travis, D. (2007), Radical Change Accidentally: The Emergence and Amplification of Small Change. *Academy of Management Journal*, 50: 515-543.
- Prahalad, C.K. and Hamel, G.(1990), "The core competence of the corporation", *Harvard Business Review* (v. 68, no. 3) pp. 79–91.
- Prahalad, C.K.(1995), The dominant logic: Retrospective and extension, *Strategic Management Journal*, Vol 16, Issue 1, pages 5–14.
- Rajagopalan, N. and Datta, D.(1996), “CEO Characteristics: Does Industry Matter?” *Academy of Management Journal*, 39, 197-215
- Rajanopalan, N. and Spreitzer, G.M. (1996), Toward a Theory of Strategic Change: a Multi-lens Perspectives and Integrative Framework , *Academy of Management Review*, 22(1),46-79.
- Sanchez, R. (1995), Strategic Flexibility in Product Competition, *Strategic Management Journal*, 16(6):135-159.
- Shi Xijie and Wu Yuhua (2004), Empirical study on three-dimensional evaluation of core competence model, *Chinese Journal of Management Science*, (3):32-41.
- Shieh, C.J. (2010), Supply Chain Management, Organizational Innovation and Corporate Culture: The impact of relatedness, *African Journal of Business Management*, 4(9): 1736-1744.
- Simon, C. (2000), Supply Chain Management: an Analytical Frame Work for Critical Literature Review , *European Journal of Purchasing & Supply Management*, (6) :67-83.
- Steiner, Miner, J. B. and Macmillan, C. (1982), *Management Policy and Strategy*, G. A. London, pages: 357.
- Stevens, G.C.(1989), Integrating the supply Chain, *International Journal of Physical Distribution and Materials Management*, 19,3-8
- Sun Yongfeng and Li Yuan (2007), One Research of Behaviors of Innovation-Selection in Transitional China's Firms, *Journal of Industrial Engineering and Engineering Management*, 21(1): 41-46.
- Szilagyi, A.D. and Schweiger, D.M. (1984), Matching managers to strategies: A review and suggested framework, *Academy of Management Review*, 9(4), 626- 637.
- Teece, D.J., Pisano, G. and Shuen, A. (1997), Dynamic Capabilities and Strategic Management, *Strategic Management Journal*, Vol.18, No.7. (Aug.,1997), pp. 509-533.
- Thomas, G. (2011), A typology for the case study in social science following a review of definition, discourse and structure, *Qualitative Inquiry*, 17, 6, 511-521
- Ulrich and Wiersema (1989), Infusing flexibility into business-to-business firms: A contingency theory and resource-based view perspective and practical implications, *Industrial*

Marketing Management, 34(6), 555–565.

Volberda (1996), Making sense of corporate venture capital, *Harvard Business Review*, 4–11 March.

Wang Maoxiang (2014), Analysis of the Elements Needed to Combine Process Management of Enterprise Management and Strategic Management, *Modern Management Science*, (3):106-108.

Wang Tao and Wang Jianjian (2002), Development History, Evolution Rule and Future Trend of Western Strategic Management Theories, *Foreign Economics & Management*, (03):7-12.

Wang Wei (2009), *Study on Enterprise's Strategic Expansion Ability Based on Core Competence*, Huazhong University of Science and Technology,

Wang Yi, Chen Jin and Xu Qingrui (2000), Core Competence of Corporation: Theory Sources and Logical Structure, *Journal of Management Sciences in China*, 5(3):24-26.

Weill, P. and Vitale, M.R.(2001), *Place to Space: Migrating to e-Business Models*, MA: Harvard Business School Press, 96-101.

Wernerfelt, B. (1984), A Resource-based View of the Firm, *Strategic Management Journal*, Vol5, Issue 2, p.171-180

West, M.A. and Farr, J.L.(1990), *Innovation and Creativity at Work: Psychological and Organizational Strategies*, John Wiley & Sons Ltd.

Wolfgang K. and Manfred S.(2000), *Institutional Economics: Social Order and Public Policy*, The Commercial Press, 110.

Wolfe, R.D. (2000), E-Business Project im Unternehmen-der Beratungsansatz der Fachhochschule beider Basel, *Informatik, Zeitschrift der schweizerischen Informatikorganisationen*, 4(1): 45-46.

Wu Huaiyu (2012), Exploration of the Ways for the Cultivation of University Students' Innovation Ability, *Journal of Wuhan University of Science and Technology (Social Science Edition)*, 14(3):334-336.

Xiang Gang and Wang Yingluo(2004), Study on the Dynamic Mechanism for Enterprise's Continuous Innovation, *Science Research Management* (6): 108-114.

Ye Xiaoling and Ye Xiaoqing (2003), Status Analysis of Chinese Company's Competitiveness and the Cultivation of Core Competence, *Management World*, (5):143-144.

Yin, R.K. (2003), *Case Study Research: Design and Method* 3rd eds, Sage Publications

Zhao Meiyu (2000), *Study on the Strategic Management of Supply Chain*, Xi'an Jiaotong University, 1-10.

Zhou Changhui (2005), Study on the Process of Chinese Enterprises' Strategic Reform: Experience and Implications from China Minmetals Corporation, *Management World*, (12):123-136.

Zhou Sanduo (2002), *Strategic Management*, Shanghai: Fudan University Press.

Appendix I Questionnaires

"IT trading enterprises Strategic Innovation" questionnaire

Dear Sir / Madam:

Hello! Thank you for your participation in this survey conducted under the Joint ISCTE-IUL/ University of Electronic Science and Technology of China Doctor of Management Program.. This questionnaire has no right or wrong questions, please read carefully and in accordance with the actual situation of the Company, truthfully and objectively select the most appropriate answer (electronic version of the questionnaire set the option can be marked in red). The answers will be kept confidential as you are providing valuable advice and information and will be used only, for research purposes, and will not be divulged to any third parties. The completion of this questionnaire takes about six minutes so I implore your help, and please do not miss any questions. We again express our sincere gratitude for your cooperation.

Telephone number: 13908206288; Email: 228195113@qq.com

The first part : the influencing factors of strategic innovation

(Note: This questionnaire has five questions of scale, which means that the extent consistent with the actual situation, 1 means completely out of line, 2 indicates “not comply”, 3 indicates uncertainty, 4 indicates compliance, 5 represents full compliance. Mark in red on the scale corresponding to your choice).

1.A company respected and advocate competitive atmosphere of the organization

1 2 3 4 5

2. IT company can keep up with market trends

1 2 3 4 5

3. The company relative to key competitors has stronger market competitiveness

1 2 3 4 5

4.The company has a large number of customers and higher demand for products

1 2 3 4 5

5. IT trading company has a bright future for its development

1 2 3 4 5

6. In the past 3 years, the sales had a steady growth

1 2 3 4 5

7. In the past 3 years the market share of the company grew steadily.

1 2 3 4 5

8. In the past 3 years the new products that the company sold increased quickly.

1 2 3 4 5

9. In the past 3 years new services of the company increased quickly

1 2 3 4 5

10. The company values the communication with its customers and has smooth communication channels.

1 2 3 4 5

11. The company values the partnership with its suppliers and has a close links with them.

1 2 3 4 5

12. The company values the relationship with its competitors and keep a close watch on its development.

1 2 3 4 5

13. The company can take various measures to build up close relationship with the government.

1 2 3 4 5

14. The company can identify the new opportunities for business.

1 2 3 4 5

15. The company is keen on the high risk and high return projects.

1 2 3 4 5

16. The company is among the first ones to introduce new products and services in the industry.

1 2 3 4 5

17. The company enjoys stronger competitive capabilities.

1 2 3 4 5

18. The company focuses to acquire the new resources from external environment to maintain the current businesses.

1 2 3 4 5

19. The company can adjust its strategic planning whenever the market opportunities appear due to the change of customers' needs.

1 2 3 4 5

20. The company can adjust its strategy with the change of government policies and laws.

1 2 3 4 5

21. The company can stick to one or two major businesses and develop them with outstanding competitive advantages in terms of implementation of the corporate strategy.

1 2 3 4 5

22. The company can diversify its businesses at the level of corporate strategy.

1 2 3 4 5

23. To develop new market the company can work with other companies.

1 2 3 4 5

24. To enhance more social relations, the company can work with other companies.

1 2 3 4 5

25. The partners enjoy the advantages that the company does not have.

1 2 3 4 5

26. The partners have advantages in the relationship with the government that the company does not have.

1 2 3 4 5

27. The partnership with other companies satisfies the needs to develop the market.

1 2 3 4 5

28. Through the partnership the company enhanced its social relationship.

1 2 3 4 5

29. In terms of the cooperation, the company can conduct various forms of communications with the partners.

1 2 3 4 5

The Second part: Strategic innovation

The following questions are about your assessment of the strategic innovation of the company, please tick the number matching the actual situation.

(Note: The questionnaire has five scales from 1 to 5 indicating very low, low, average, high and higher respectively.)

1. The company's business model can provide value to customers and

continuously improve the products or services.

1 2 3 4 5

2. The company's business model can continue to introduce a large, diverse new customers.

1 2 3 4 5

3. The company can constantly introduce new suppliers and other partners.

1 2 3 4 5

4. The innovative transaction approaches are adopted into the company's business model.

1 2 3 4 5

5. The company can constantly introduce new ideas, methods and products into its business model.

1 2 3 4 5

6. The company constantly introduce the new operation workflow, practices and norms into organization.

1 2 3 4 5

7. To seize the business opportunities, the company can develop new resources and capability in the organization construction.

1 2 3 4 5

8. To seize the new business opportunity, the company can promote new products and services.

1 2 3 4 5

9. To seize the new business opportunity, the company can make organizational change to enter the new market area.

1 2 3 4 5

10. To seize the new business opportunity, the company can adjust or draw up new competition strategy.

1 2 3 4 5

11. To seize the new business opportunity, the company can formulate tailored supply chain model.

1 2 3 4 5

12. To seize the new business opportunity, the company can introduce new partners into its supply chain.

1 2 3 4 5

The third part: other information

For sake of easy statistic, please fill in the following information and put a tick in the box next to your information.

1. Your gender: (1) ☐ Male (2) ☐ Female

2. Your age: (1) ☐ 25 years of age (2) ☐ 25-34 years old (3) ☐ 35-44 years old
(4) ☐ 45-54 years old (5) ☐ 55 years old

3. The highest degree: (1) ☐ High School (secondary school) and below (2) ☐ Associate (3) ☐ Bachelor (4) ☐ Master or above

4. Married status: (1) ☐ Married (2) ☐ Unmarried

5. Position Level: (1) ☐ General Staff (2) ☐ grass-roots management
(3) ☐ middle management (4) ☐ Senior Management

6. Working time at your company: (1) ☐ less than 1 year (2) ☐ 1-3 years
(3) ☐ 4-6 years (4) ☐ 7-10 years (5) ☐ 11 years and over

7. Your Company Name (Required):

8. Establishment time of your company: (1) ☐ less than 5 years
(2) ☐ 5-10 years (3) ☐ above 10 years

9. The ownership of your company: (1) ☐ SOE (2) ☐ Privately owned enterprise
(3) ☐ foreign-owned enterprise (4) ☐ joint venture (5) ☐ Others

10. Number of employees: (1) ☐ less than 300 (2) ☐ 300-2000

(3) ☐ more than 2000 people

11. Total assets (RMB): (1) ☐ less than 40,000,000

(2) ☐ 40,000,000 -4 hundreds million (3) ☐ more than 400 million

12. Your department: (1) ☐ Marketing / Market

(2) ☐ after-sale service / maintenance

(3) ☐ general management (personnel, administration) (4) ☐ Finance

Thank you very much for your cooperation!