



**Instituto Universitário de Lisboa**

**Business Model Innovation of Chinese Internet Enterprises a  
Stakeholder Perspective of BAT  
(Baidu, Alibaba, Tencent)**

**WANG Xiyuan**

Thesis submitted as partial requirement for the conferral of the degree of  
**Doctor of Management**

Supervisor:

Prof. Nelson António, Professor, ISCTE University Institute of Lisbon

Co-supervisor:

Prof. XIAO Wen, Professor, University of Electronic Science and Technology of  
China

January, 2019



Instituto Universitário de Lisboa

Business Model Innovation of Chinese Internet Enterprises a Stakeholder Perspective of BAT  
WANG Xiyuan



**Business Model Innovation of Chinese Internet Enterprises a  
Stakeholder Perspective of BAT  
(Baidu, Alibaba, Tencent)**

**WANG Xiyuan**

Thesis submitted as partial requirement for the conferral of the degree of  
**Doctor of Management**

Supervisor:

Prof. Nelson António, Professor, ISCTE University Institute of Lisbon

Co-supervisor:

Prof. XIAO Wen, Professor, University of Electronic Science and Technology of  
China

January, 2019

[This page is deliberately left blank.]

## Statement of honor Submission of doctoral thesis

I the undersigned state on my honor that:

- The work submitted herewith is original and of my exclusive authorship and that I have indicated all the sources used.
- I give my permission for my work to be put through Safe Assign plagiarism detection tool.
- I am familiar with the ISCTE-IUL Student Disciplinary Regulations and the ISCTE-IUL Code of Academic Conduct.
- I am aware that plagiarism, self-plagiarism or copying constitutes an academic violation.

Full name \_\_\_\_\_ WANG Xiyuan \_\_\_\_\_

Course \_\_\_\_\_ IDMgt \_\_\_\_\_

Student number \_\_\_\_\_ 74733 \_\_\_\_\_

Email address \_\_\_\_\_ wxnga1@iscte.pt \_\_\_\_\_

Personal email address \_\_\_\_\_ shbjy001@163.com \_\_\_\_\_

Telephone number \_\_\_\_\_ +8613701979792 \_\_\_\_\_

ISCTE-IUL, 30/4/2019

Signed



\_\_\_\_\_

[This page is deliberately left blank.]

## **Abstract**

Driven by the tide of world economic development and the rapid development of information technology, China's Internet industry has developed rapidly and continuously, and the business model has been continuously innovated, which has effectively promoted the development of China's Internet industry economy. However, rapid development has led to conflicts and conflicts between business model innovation and stakeholders such as user interests, corporate ethics, and corporate performance.

This study combs the relationship and interaction between business model theory, corporate ethics theory, and stakeholder theory, reviews the development history of Chinese Internet companies, analyzes the forms of Chinese Internet enterprise business model innovation, and discusses the contradiction and confusion within the innovation of China's Internet business model, and construct the "Business Model Innovation - Performance Structure Model". Through the case studies of Baidu, Alibaba, and Tencent, it verifies the inevitable relationship among the business model innovation - stakeholder relationship quality - corporate performance. And put forward relevant suggestions for the problems in the Internet business model innovation.

**Keywords:** business model innovation; stakeholders; corporate performance; internet companies

**JEL:** M14; M21

[This page is deliberately left blank.]



## Resumo

Impulsionada pela tendência do desenvolvimento econômico mundial e pelo desenvolvimento rápido da tecnologia das informações, o setor de Internet da China desenvolveu-se rápida e continuamente, e o modelo de negócios foi continuamente inovado, o que efetivamente promoveu o desenvolvimento da economia chinesa da indústria da Internet. No entanto, o desenvolvimento rápido levou a conflitos entre a inovação do modelo de negócios e os stakeholders, como os interesses dos usuários, a ética corporativa e o desempenho corporativo.

Este estudo combina a relação e interação entre a teoria do modelo de negócios, a da ética corporativa e a dos stakeholders, recorda a história de desenvolvimento de empresas de Internet chinesas, analisa as formas de inovação do modelo chinês de negócios e discute a contradição e confusão dentro da inovação de modelo de negócios da indústria de Internet na China, construindo o "Inovação do Modelo Empresarial - Modelo de Estrutura de Desempenho". Por meio dos estudos de caso do Baidu, Alibaba e Tencent, verifica-se a relação inevitável entre a inovação do modelo de negócios - qualidade do relacionamento com stakeholders - desempenho corporativo. E apresenta sugestões relevantes para os problemas na inovação do modelo de negócios na indústria de Internet.

**Palavras-chave:** inovação de modelos de negócios; stakeholders; desempenho corporativo; empresas de internet

**JEL:** M14; M21

[This page is deliberately left blank.]

## **Acknowledgments**

Time passed very slowly and quickly, from 2015 to now has been 4 years. Near graduation, there is a lot of memories and thanks in my mind. The doctor's study gave me a lot of new perspectives and new knowledge on thinking.

The moment I set foot on the continent in order to learn, I told myself to insist on and finish it, to work hard, to adapt to the life of a foreign country where no family was around. From strange to stable to familiar, I gratefully acknowledge the help and company of teachers and students during this time.

First of all, I would like to express my heartfelt gratitude to my mentor, Professor Nelson Jose Dos Santos Antonio, who is an old and warm-hearted gentleman with indifferent appearance. He offered me a lot of valuable suggestions in my thesis, opened up my field of knowledge and taught me many new ways to think about problems. Professor Nelson took me to know Portugal and learn about Western culture. His kindness and openness were the biggest motivation for me to insist on my research.

Secondly, I would like to thanks to my mentor, Professor Xiao Wen. She has walked me through all the stages of the writing of this thesis. Thirdly, I would like to thanks to Professor Virginia Maria Trigo, who takes care of every Chinese student like a mother.

In addition, I am grateful to my friend Dr. Shi Hao, whose a lot of support and help in my study and life during my study aboard has benefited me a great deal; I am grateful to my research team: Zhang Qingyang, Zhang Liyue, Zhang Yiyun, Jin Luping, and Chen Danping etc based on their support and assistance in desk research and data collection, and I am also grateful to every interviewee, who helped me complete the questionnaire and shared their experiences.

Last my thanks would go to my beloved family, without their support, I cannot complete my studies. Thanks to my wife for her dedication to the family. Always Love you.

[This page is deliberately left blank.]

# Contents

Chapter 1: Introduction.....	1
1.1 Research background.....	1
1.1.1 Theoretical background.....	1
1.1.2 Practical background.....	3
1.1.3 Overview of concepts.....	4
1.2 Research issues.....	5
1.3 Research objective.....	5
1.3.1 Research significance.....	5
1.3.2 Main research contents.....	6
1.4 Research contributions.....	7
1.4.1 Theoretical contributions.....	7
1.4.2 Practical contributions.....	8
1.5 Research technical course.....	8
Chapter 2: Literature Review.....	11
2.1 Overview of business model theory.....	11
2.1.1 Elements of a business model.....	13
2.1.2 Connotation and path of business model innovation.....	16
2.2 Overview of stakeholder theory.....	20
2.2.1 Connotation and definition of stakeholders.....	20
2.2.2 Classification and description of stakeholders.....	21
2.2.3 Quality of stakeholder relationships.....	24
2.3 Enterprise ethics theory.....	26
2.3.1 Definition of business ethics.....	26

2.3.2 Analysis of business ethics from the user perspective.....	27
2.3.3 Perceptual evaluation of the company’s overall ethical behaviors.....	29
2.4 Overview of business performance.....	29
2.4.1 Definition of business performance.....	29
2.4.2 Scope and content of business performance.....	30
2.5 Guiding significance of theoretical relationship summary on this paper.....	34
2.5.1 Literature summary.....	34
2.1.5.4 Conceptual model.....	36
2.5.2 Guiding significance of this study.....	37
Chapter 3: Research methods and design.....	39
3.1 Research methods.....	39
3.2 Case selection.....	39
3.3 Research design.....	40
3.3.1 Data collection.....	40
3.3.2 Data processing.....	40
Chapter 4: Field Study.....	41
4.1 Status and confusion in business innovation of Chinese Internet platform enterprises.....	41
4.1.1 Development descriptions of the Chinese Internet market.....	41
4.1.2 Development of China’s Internet.....	42
4.1.3 Review on the industrial development of China’s Internet.....	46
4.1.4 Panoramic description of the business model innovation of China’s Internet.....	49
4.1.5 Argument on business model innovation of China’s Internet.....	59
4.2 Theoretical system and research model.....	64
4.2.1 Theoretical structure.....	64
4.2.2 Construction of research model and design of measurement.....	69
4.3 Data statistics and analysis.....	77

4.3.1 Descriptive statistical analysis.....	77
4.3.2 Data reliability and validity analysis.....	78
4.3.3 Verification analysis of hypotheses.....	81
Chapter 5: Case Analysis of Model Application.....	88
5.1 Case One: Baidu.....	88
5.1.1 Business model-P4P.....	88
5.1.2 Research on business ethics, relationship quality of stakeholders and customer satisfaction.....	88
5.1.3 Analysis of the business model canvas.....	92
5.1.4 Summary.....	93
5.2 Case Two: Taobao.....	93
5.2.1 Business model of Taobao.....	93
5.2.2 Research on business ethics, relationship quality of stakeholders and customer satisfaction.....	94
5.2.3 Analysis of the business model canvas of Taobao.....	97
5.2.4 Summary.....	98
5.3 Case Three: Tencent WeChat.....	99
5.3.1 Business model of WeChat.....	99
5.3.2 Research on business ethics, relationship quality of stakeholders and customer satisfaction.....	99
5.3.3 Analysis of the business model canvas of WeChat.....	102
5.3.4 Summary.....	103
Chapter 6: Conclusions and Discussion.....	105
6.1 Summary.....	105
6.2 Research conclusions:.....	106
6.3 Value and significance:.....	109

6.4 Suggestions on practical applications.....	110
6.4.1 Suggestions for Internet enterprises.....	110
6.4.2 Suggestions for the government.....	111
6.5 Research limitations and prospects.....	111
Bibliography.....	113
Webliography.....	121
<b>Appendix</b> .....	123
Appendix 1 Customer Satisfaction Evaluation Questionnaire of Platform Enterprises (Questionnaire A).....	123
Appendix 2 Customer Satisfaction Measurement Scale of Internet Platform Enterprises (Questionnaire B).....	125
Appendix 3 Questionnaire on the Influence of Business Model Innovation of Internet Platform Enterprises on the Relationship Quality of Stakeholders and Enterprise Performance (Questionnaire C).....	127
Appendix 4 “3-4-8” composition system of the business model proposed by Yuan Lei.....	133
Appendix 5 Business Revenue of the Chinese Internet from 2017 to 2018.....	133
Appendix 6 Growth of Chinese Information Service Revenue from 2017 to 2018.....	134
Appendix 7 Operating Revenue and Net Profit of Baidu from 2015Q1 to 2017Q3.....	134
Appendix 9 Active Marketing Users of Baidu Search from 2015 to 2017.....	135
Appendix 10 2016Q1 to 2017Q, Alibaba E-commerce Operating Income and Net Profit.....	136
Appendix 11 Monthly Active Users of Core E-commerce of Alibaba from 2016Q1 to 2017Q3.....	136
Appendix 12 Operating Revenue of WeChat from 2016 to 2017.....	137
Appendix 13 Monthly Active Users of WeChat from 2016 to 2017.....	137
Appendix 14 Key Fields of Internet + Sharing Economy in China (Transaction volume: EUR 13 million).....	138
Appendix 15 2017 China Comprehensive Retail E-commerce Complaint.....	138



Appendix 16 2017 China Living Service E-commerce-OTA Complaint.....	139
Appendix 17 Analysis of Basic Characteristics of Relevant Industrial Practitioners for details. .....	140
Appendix 18 Analysis of Basic Characteristics of Surveyed Customers.....	141
Appendix 19 KMO Test and Bartlett Test.....	141
Appendix 20 Correlation Analysis and Bartlett Test.....	146
Appendix 21 Definitions of Enterprise Ethics.....	150
Appendix 22 The Classification of the Customer Satisfaction.....	151
Appendix 23 Design of Measurement on Relationship Quality of Stakeholders-Employees....	153
Appendix 24 Design of Measurement on Relationship Quality of Stakeholders-External Stakeholders.....	154



## List of Tables

Table 2- 1Summary of business model concepts in studies based on value creation theory.....	13
Table 2- 3 Overview of the business model analytical framework proposed by Osterwalder (2011) .....	14
Table 2- 4 The classification of the stakeholders.....	23
Table 2- 5 Definitions of relationship quality proposed by Chinese and foreign scholars.....	24
Table 4- 1Dimensional indicators of business model innovation.....	70
Table 4- 2 Ethical evaluation indicators of Chinese Internet platform enterprises.....	71
Table 4- 3 Measurement scale on the relationship quality of stakeholders-public stakeholders....	73
Table 4- 4 Questionnaire B: customer satisfaction measurement scale of internet platform enterprises.....	74
Table 4- 5 Design of economic performance measurement scale of internet platform enterprises	76
Table 4- 6 Reliability analysis results.....	78
Table 4- 7 Correlation analysis between relationship quality of stakeholders and business model innovation.....	81
Table 4- 8 Regression analysis results between relationship quality of stakeholders and business model.....	82
Table 4- 9 Test of regulating effect.....	83
Table 5- 1 Overall customer satisfaction survey results of Baidu search.....	91
Table 5- 2 Baidu search business model canvas analysis.....	92
Table 5- 3 Overall customer satisfaction survey results of Taobao.....	96
Table 5- 4 Taobao network business model canvas analysis.....	97

[This page is deliberately left blank.]

## List of Figures

Figure 1- 1 Research process of this study.....	9
Figure 2- 3 Dimensional frameworks of customer perceived ethics.....	28
Figure 2- 4 Swedish customer satisfaction barometer.....	31
Figure 2- 5 American customer satisfaction index.....	32
Figure 2- 6 Chinese customer satisfaction index.....	33
Figure 2- 7 Calculation method of the Chinese customer satisfaction index.....	33
Figure 2- 8 Basic conceptual model of business model innovation structure.....	37
Figure 4- 1 Basic theoretical framework.....	65

[This page is deliberately left blank.]

## **List of Abbreviations**

**ROI:** Return On Investment

**ROA:** Return On Assets

**ROE:** Return On Equity

**EVA:** Economic Value Added

**CNNIC :** China National Network Information Center

**ICQ:** Online chat software, means “I am looking for you”.

**OICQ:** Online chat software, means “open”.

[This page is deliberately left blank.]



## **Chapter 1: Introduction**

### **1.1 Research background**

The success of an innovative product is inseparable from the success of the business model. Many companies gain new development opportunities from the Internet + innovation, but it does not mean that they can be developed in a sustainable manner. The follow-up market development and customer maintenance are necessary measures for the sustainable development of companies. As information technology becomes more popular and the influence of the Internet is enhanced, more and more players are participating in the competition, making the competition increasingly fierce. Business model innovation brings people together invisibly, and expands the user base through the Internet information communication, thinking transmission, payment system, and commodity Internet of Things, thus gaining new market value.

In the past, corporate innovation refers to the competition centered on technology and products. However, with the progress of social productivity, this definition is changing. Peter F. Drucker (2014) believed that the impact of business model competition has surpassed the product development competition among companies.

#### **1.1.1 Theoretical background**

##### **(1) Stakeholders**

Stakeholder theory was proposed in the 1960s-80s and then developed rapidly, which promoted the transformation of corporate management methods. This rapid development is founded on its profound theoretical and practical background. With the progress of social productivity, the impact of material elements on corporate development has been weakened, while the impact of people on corporate development has been intensified. Stakeholders have an increasing impact on corporate innovation.

##### **(2) Business model**

The term “business model” originated in the 1990s. The impact of business model

innovation mainly refers to Internet product innovation, such as the concept and meaning of innovation, innovative thinking, and innovative methods. Business model is affected by business ethics, and there are few studies on business performance evaluation. Therefore, it is necessary to analyze and study the existing problems based on actual business model innovation cases.

### (3) Business ethics

The theory of business ethics was born in the 1970s and developed with the advent of business. Business ethics is a manifestation of the social value of the companies. In 1996, the US government published relevant regulations on business ethics: “Statement on Business Ethics and Corresponding Actions”, which was then applied to the US business practices.

In the past three decades, research on business ethics has been enriched and developed. It has become modernized in terms of connotation, research subject, impact, business ethics decision-making and business ethics construction, etc. More attention has been paid to the development of global business ethics and new technologies to investigate the ethical issues arising therefrom.

Due to the slow progress of China’ s modern business economy, there is a lack of profound theoretical analysis of modern business ethics. Especially in the context of the giant leaps of the Internet industry, related research is extremely rare. Therefore, it is necessary to conduct profound research on the business ethics issues arising from business model innovation due to the Internet and explore the impact of business ethics on business model innovation and paths.

### (4) Customer satisfaction

The research on customer satisfaction started in the 1990s. Cutler (1967) pointed out that satisfaction is a psychological experience of people. Specifically, it refers to the perceived state of an individual which comes from comparing the feelings of a product or service with their expectations. Cutler (1967) further expressed this psychological experience as a function of the difference between user desires and user perceptions.

Research on customer satisfaction was born in the 1990s. In order to improve customer satisfaction, many developed countries have initially established a customer satisfaction index system for market demand and product competitiveness analysis and proposed a research evaluation system. Cutler (1967) believed that satisfaction refers to the criterion of human sensory response, which is obtained by comparing the actual effect of a product or service with

people's expectations. Cutler (1967) argued that user satisfaction is a psychological experience of human beings, and further described this psychological experience as a function of the difference between user expectations and user perceptions.

From the above interpretation, the meaning of user satisfaction can be summarized as the actual psychological comparison between the value of the product or service and the user expectations when the user purchases a product or service. As an integral part of stakeholders, customers have a wide influence.

### **1.1.2 Practical background**

The comprehensive development of Internet technology has made Internet applications a necessity for life and work. People can use Internet products for online communication, online payment, and online appointments without leaving their home, which brings a brand-new way of living. An increasing number of people regard the online platforms as their first source of information and news and are accustomed to find and pay for their favorite products and services through the webpages.

Online shopping has become the mainstream of mass consumption. The 2017 China Internet Development Report published by the China Internet Network Information Center shows that China's Internet user population has reached 740 million. The popularity of China's Internet applications has reached 54%. There are about 690 million mobile Internet users, which account for 95% and become the main population of China's total Internet users.

There have been many incidents in China's Internet industry that have affected traditional moral systems. People often face confusing negative information from the Internet, while the monopolized and false information is prevalent. According to the Consumer Report published by China Quality Network, the e-commerce complaints topped the list in 2016, totaling 130,000. Specifically, online shopping complaints occupied the largest proportion and accounted for 65.4%. Product quality issues, such as refund to replacement, logistics services, and false discount events, were the main problems encountered by users. Internationally, (People.cn 2018) Facebook leaked user information and its market value evaporated by USD 36.7 billion. The leakage scandal has once again strained the nerves of the mobile Internet users. In China, Internet companies over-scrutinize user privacy at the advantage of their own convenient conditions,

which has triggered user dissatisfaction. On January 3, 2018, Alipay opened the annual personal bill inquiry, leaking the personal information authorized by users to Sesame Credit, and resulting in strong dissatisfaction among netizens. After Baidu's "Wei Zexi Incident" was exposed, a big discussion on business model innovation was triggered. Therefore, from the perspective of business ethics, it is necessary to re-examine the business model innovation of Internet companies for the purpose of sustainable social and corporate development, which is also a meaningful challenge.

### **1.1.3 Overview of concepts**

#### Internet enterprises

Internet platform companies rely on the Internet platform information technology and provide platform support services and make profits through the Internet. Internet platform companies are divided into three categories. 1. Basic technology service companies that offer Internet infrastructure configuration, build software and hardware Internet facilities, provide basic services for all the Internet companies, and maintain the Internet market environment. 2. Internet technology product service companies which focus on Internet application service technology products and provide technical support services, such as Microsoft. 3. Internet portal companies, such as Amazon, Taobao, and Baidu, which independently develop various information products, and provide users with various online services through the innovation of information product business model. In addition, some researchers define Internet platform companies as online transaction merchants recorded on the website.

The Internet portal companies are the Internet platform companies defined in this study. Rochet and Tirole (2003) argued that platform companies do not sell goods or services to buyers and sellers. Instead, they attract buyers and sellers through their platform advantages by formulating reasonable rules and fees. Such platform providers are called platform companies. Xu (2006) believed that the platform is a virtual space that can attract multiple customers to conduct transactions; Zhang (2010) proposed that the concept of the platform has gradually evolved into technology-based, market-oriented core components, programs or other services. Based on the bilateral market, platform companies obtain excess profits from process management by exchanging customer value.

## **1.2 Research issues**

The development of the business model innovation of the Chinese Internet industry has impacted traditional ethics, leading to conflicts between the value creation effects of Internet companies and stakeholders. The business models of the Internet industry, the business ethics of Internet companies and the stakeholder relationships affect the growth performance of the companies. This paper explores the contradictions and conflicts in the process of business model innovation of Chinese Internet companies from the perspective of stakeholders.

The specific issues are as follows:

- (1) Research on the business model innovation of Chinese Internet companies.
- (2) Business ethics conflicts in the business model innovation of Chinese Internet companies.
- (3) Basic elements of the business model innovation structure of Chinese Internet companies
- (4) Impact of business model innovation on stakeholders in the value creation process of Chinese Internet companies;
- (5) The relationship between the business model innovation, business ethics, the quality of stakeholder relationships and the effect of corporate performance growth in the value creation process of Chinese Internet companies.

## **1.3 Research objective**

### **1.3.1 Research significance**

The Internet has transformed the traditional living mode, and changed people's living habits, as well as triggered conflicts with ethics. How to solve ethical dilemmas? How can companies innovate their business models to stand out from the fierce competition?

The development and application of artificial intelligence, big data, and Internet technologies have had a huge impact on people's lifestyles, habits and thinking modes. They have brought convenience to life, and also innovation and ethical conflicts. How to face the ethical dilemma of innovative development and moral conflict, and ensure the competitive advantage of companies through benign innovation has become an important issue that must be addressed in the

development of Internet companies. From the perspective of stakeholders, this paper studies the elements of business model innovation of Chinese Internet platform companies and analyzes the interaction between business ethics and business model innovation, and the internal connection of the quality of stakeholder relationship with business ethics, business model innovation, and corporate performance, thus providing theoretical research support for the development issues which Chinese Internet companies are faced with.

A company is a unity of economy, society and people. The creation of corporate value includes “creation of economic value” and “creation of social value”. With the development and popularization of Internet technology, business and technology, technology and ethics are facing greater challenges. As the Internet market economy is changing rapidly, in order to maximize profits, companies often formulate goal-oriented management methods. In the rough business model innovation, many Internet companies are anxious for success and ignore the business ethics that they have to bear, which lays hidden dangers to their own development and causes serious harm to social development. Therefore, exploring the issues of business model innovation of Internet companies from the perspective of business ethics can enhance the attention and application of business ethical elements in management practices, and promote the healthy and sustainable development of Internet business model innovation. In the meanwhile, evaluating the ethical factors of stakeholders in business model innovation contributes to analyzing the moral dilemma of Internet companies, promoting the healthy development of companies, and enriching the research results of Internet business innovation. It is not only a requirement of the times, but a theoretical construction requirement in the development research of Chinese Internet companies, and thus is of great significance.

### **1.3.2 Main research contents**

(1) Study the business model innovation model of Chinese Internet platform companies.

Through data organization and comparison, the development experience of the Chinese Internet industry is organized to gain an insight into the business model innovation and development laws of Chinese Internet companies in the past two decades, and the characteristics of Chinese Internet platform companies and the business model innovation and development are analyzed.

(2) Analyze and construct the innovation performance structure model of the Internet business model from the perspective of stakeholders.

The innovation of Chinese Internet industry has subverted traditional business models. Based on the achievements of business model innovation and the market development characteristics of the Chinese Internet industry, the performance structure model of the Internet business model innovation is constructed for further research.

(3) Discuss the role of ethical factors in the value creation of Chinese Internet companies. Ethical factors affect relationships such as customer relationship ethics, employee ethics, and supplier relationship ethics. What moral conflicts have arisen in the value creation of the business model innovation of Chinese Internet companies? What impact will these conflicts have?

(4) Investigate the impact of business model innovation on the quality of stakeholder relationships in Chinese Internet platform companies. Through questionnaire surveys, interviews, industrial and corporate data collection, the data analysis model is constructed to conduct case studies.

## **1.4 Research contributions**

### **1.4.1 Theoretical contributions**

(1) Expand the research concepts and fields. The research and application of the stakeholder concept in business model innovation are expanded, and the impact of business model innovation on Chinese Internet companies is explored. Besides, a new research perspective of business model innovation is built, and the research on business model innovation in the Internet industry is enriched.

(2) Innovate the research perspective. Cross-domain research is performed from the aspects of business ethics, stakeholders, and business model innovation to address the ethical dilemmas of Internet companies, and also provide reference and improvement suggestions for Internet companies in the evaluation of business model innovation.

(3) Provide reference for the business model innovation of Chinese Internet companies. The innovation of Chinese Internet industry has overturned the traditional business models. Based on the market development characteristics of the Chinese Internet industry, the performance

structure model of Internet business model innovation is constructed for further research. Regulating business ethics and safeguarding the rights and interests of stakeholders is of practical significance for the smooth growth of Chinese Internet platform companies.

#### **1.4.2 Practical contributions**

(1) Analyze the practical confusion in the business model innovation of Chinese Internet companies. Explore the connotation of Internet business model innovation through research on business ethics and stakeholders.

(2) Promote the Chinese Internet platform companies to focus on and conduct business ethics construction. Focus on the ethical construction and development of Chinese Internet companies from the stakeholder perspective.

(3) Provide theoretical research support and reference for Chinese Internet companies in the development of business model innovation.

### **1.5 Research technical course**

First of all, the research results in the fields of business models and innovations, Internet business models and their innovation theories and practices, and business ethics are analyzed and discussed, while the Internet development process of China is reviewed. Then, the existing problems are analyzed, and the concerned field and concepts in this study are clarified. Based on previous theoretical research and market research, the research methodology is designed, the research hypotheses are proposed, and the research models are constructed to perform quantitative and qualitative research. Next, the cases of Baidu, Alibaba and Tencent are engaged to conduct empirical analysis and verify the conclusions. Finally, the innovation methods, paths, and models of China's Internet business models are investigated and explored. The specific research structure is shown in Figure 1-1.



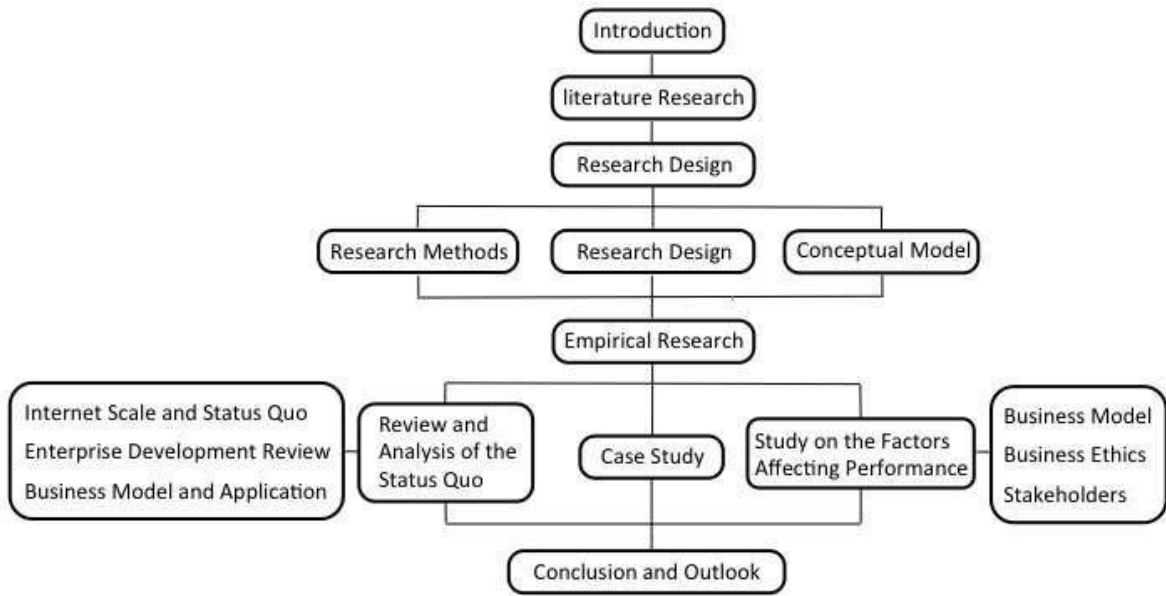


Figure 1- 1 Research process of this study



## **Chapter 2: Literature Review**

As value-creating production organizations, companies ultimately target at maximizing their profits. By combining human capital, non-human capital and other production factors, they transform them into products with certain values. Any company operating in a constantly-changing social and economic environment will cooperate with other companies, target customers and the public in production and marketing activities.

The fundamental purpose of product business model innovation includes: First, the company's products must conform to social values and enjoy competitive advantages. In addition, they should be able to obtain higher value profits and achieve the performance goal of the company. Therefore, business ethics and business performance have important impacts on business model innovation. In this chapter, literature research is performed on business model theory, stakeholder theory, business ethics theory, and business performance theory.

### **2.1 Overview of business model theory**

With the prosperity of the global Internet economy, the concept of business model innovation has received widespread attention. The concept of business model has been explained and applied to the practices of business and management. In recent years, the research results of business models have been booming, and have been frequently discussed in academic papers, news journals, and conference reports. However, the definition of the business model has not yet been determined, and related research is becoming diversified.

Since the end of the 20th century, business model theory has attracted the attention of researchers and business operators. The first field is e-commerce on the Internet, which is reflected in the information technology framework and business model operation of the Internet in the 21st century. Johnson (2008) proposed four aspects: customer benefits, business models, channel resources, and sustained user growth rates. Another field is strategy, which includes the following four theoretical scopes: profit models, business logic, value creation methods, and systems.

**Profit model perspective:** From a conceptual perspective, the perspective focuses on how the business model makes profits. For example, Stewart (2000) argued that a business model is a logical statement through which a company can obtain and maintain its source of income.

**Business logic perspective:** Regard the business model as the operation and management model of companies. For example, Amit (2001) believed that business models are used to develop business opportunities, value creation content, institutional systems, and governance structures. Magretta (2002) pointed out that the business model is: the value stream, revenue stream, and logistics portfolio between the company and its business partners and buyers.

**Service logic perspective:** Refer to the business process and operation model of companies. For example, Amit (2001) argued that business models are used to develop business opportunities and create value in transaction content, structure, and integrated architecture. Magretta (2002) believed that the business model is a unique combination of three business partners: buyer value stream, revenue stream, and logistics portfolio.

**Value creation perspective:** Refer to the company's way of value creation. For example, Petrovic et al. (2001) believed that the business model is the value creation logic of the organization or business system. Rosenbloom (2002) and Mikado (2001) proposed that the business model is the network of company structure and partners established by the company for value creation, value marketing, and value realization. Li (2009) pointed out that the business model is a global solution that integrates internal and external elements of the companies, and guarantees the profitability of the system.

**Systematic perspective:** Business model is considered as a system of one or more interconnected elements with comprehensive characteristics. For example, James F. Moore (1993) considered business ecosystems to be based on economic complexes, organization and individual interaction. It mainly consists of production suppliers engaged in the production and supply of goods and services, including producers, sellers, consumers, investors, and governments.

To sum up, this study agrees with the value creation perspective and reviews the related theories as shown in Table 2-1.

Table 2- 1 Summary of business model concepts in studies based on value creation theory

Scholar (Year)	Definition of business model
Linder & Canrell (2000)	The business model is the logic behind enterprise value creation
Makadok (2001)	The business model is the enterprise structure and partner network established by companies for value creation, value marketing and value realization to generate profitable and sustainable customer relationship capital
Osterwalder & Pigneur (2005)	The business model is a theoretical tool that contains solid business elements and their relationships, and can describe the business logic of a particular enterprise
Li Zhengyong (2009)	The business model is a global solution that integrates the internal and external elements of the enterprise to form a complete, efficient and unique competitive operating system, thereby maximizing the enterprise value, and providing products and services to keep the system profitable.
Chesbrough & Rosenbloom (2002)	The business model is the medium that connects technology development and value creation

### 2.1.1 Elements of a business model

There are following standpoints on the composition of business model: Applegate (2000) believed that it should include: concepts, values, and capabilities. Hamel (2000) proposed that it should include core strategy, strategic resources, customer interface, and value network. Chesbrough et al. (2002) considered it integrating value proposition, target market, internal value chain structure, cost structure and profit model, value network and competition strategy. Afuah & Tucci (2003) believed that it should consist of value proposition, target market, internal value chain structure, cost structure and profit model, value network and competition strategy. Osterwalder (2004) presented that it should include value proposition, target group, channel access, customer relationship, value distribution, core competitiveness, partner network, cost

structure, and revenue model. Johnson et al. (2008) believed that it should include customer value proposition, profit formula, core resources and key processes. Weng (2004) pointed out that it should include value objects, value content, value submission, and value recovery. Yuan (2007) asserted that it should include value proposition, value network, value maintenance, and value realization. Zheng (2011) believed that it should be comprised of value proposition, business model, incentive layer, target layer, scenario layer, foundation layer, action layer, and result layer. Table 2-2 shows the research summary of business model elements.

Table 2-2 shows the research summary of business model elements.

	Author (Year)
Value network	Hamel (2000), Chesbrough (2002), Yuan lei (2007) , Osterwalder (2004)
Value proposition	Chesbrough (2002) , Osterwalder (2004) , Yuan lei (2007) , Zheng chengde (2011)

The analytical framework proposed by Osterwalder (2005) for business model elements has a far-reaching impact and is close to company practices. Based on systematic analysis and summary of previous research on business model elements, four business model dimensions that are both different and related are constructed: product dimension, customer interface dimension, infrastructure dimension, and financial status dimension. These four dimensions are decomposed into nine elements: value proposition element, target group element, channel access element, customer relationship element, value distribution element, core competitiveness element, partner network element, cost structure element, and revenue model element as shown in Table 2/3.

Table 2- 3 Overview of the business model analytical framework proposed by Osterwalder (2011)

Dimension	Element	Detailed description
Product	Value proposition	Describes the products and services which create value for specific customer segments, such as novelty, performance, status/identity and efficiency.
Customer	Target customer	Describes the different groups or organizations that enterprises want to contact and serve, such as the mass market, niche markets and diversified markets.

interface	Channel	Describes how enterprises communicate with their customer segments to transmit their value proposition, such as self-established channels and distribution channels.
	Customer relationship	Describes the types of relationships that enterprises establish with specific customer segments, such as personal assistant, special personal assistant, self-services, automatic services, community and joint creation.
Infrastructure	Core resource	Describes the necessary factors required for the business model to operate effectively, such as physical assets, knowledge assets, financial assets and human resources.
	Key business	Describes what is essential for enterprises to do in order to guarantee the feasibility of the business model, such as product manufacturing, problem solving, and platform/network construction.
	Partnership network	Describes the supplier and partner network required for the effective operation of the business model. The purposes for establishing important cooperation generally includes: optimization of the business model, application of economy of scale, reduction of risks and uncertainties, and acquisition of specific resources and businesses
Financial status	Income source	Describes the cash income that the enterprises acquire from each customer group, such as asset sales, service charge, authorization charge, economic charge and advertising charge.
	Cost structure	Describes all the costs incurred in operating the business model. The cost structure has the following characteristics: fixed cost, variable cost, economy of scale and economy of scope

Source: China Machine Press (2011)

Yuan (2007) believed that the business model refers to how companies create value for shareholders and other stakeholders by designing value requirements, building value networks, value maintenance and value realization, and creating customer value. He combined the domestic and foreign business model element theory, and creatively proposed the 3-4-8 business model

portfolio system, including three value interfaces, four value plates, and eight elements.

Yuan's business model includes three aspects: strategic direction, operating structure and economic logic, and also considers customer value, partner value, and corporate value, thus forming a relatively systematic business model structure, which this study is based on.

## **2.1.2 Connotation and path of business model innovation**

### **2.1.2.1 Connotation of business model innovation**

Business model innovation refers to newly design or redesign an existing business model, and can also be understood as reorganizing, transforming, or redesigning the original business model of a company. The interpretation of business model innovation by scholars at home and abroad can be summarized into the following two aspects: (1) Business logic perspective: Linder and Cantrell (2000) divided the business model innovation path into four categories: retain the essence of the original business model, and enhance the company's core competitiveness by improving the product brand, product or service influence, cost organization structure, and technical guarantee, and change the company's position on the price/value curve; promote the further development of the company's existing business logic; tap the company's existing business model for innovation and development; and introduce new competitive business logic for the company. (2) Define business model innovation from the perspective of module reorganization. For example, Mitchell & Coles (2003) believed that the business model is improved by the module elements provided by business model stakeholders, which results in the change of the business model. The business model change that has not been applied is business model innovation.

The Internet business model refers to an innovative, high-value, high-profit, high-risk new business operational and organizational structure model that integrates traditional businesses and links multiple business channels. The Internet business model is innovated in terms of platforms and services, which is characterized by unique customer value proposition, profit model, resources and production processes. It has changed the internal structure and operating mechanism of the company and brought about the upgrade of products, services or technologies. Substitution can change the foundation of value chain links and competition and reshape the market structure. The main perspectives are as follows:



(1) Change the elements and form business model innovation. Most researchers believe that changing the business model elements can realize organizational innovation of the business model. For example, the Business Model Canvas proposed by Osterwalder (2008) pointed out that the business model includes nine elements: customer segmentation, value positioning, user acquisition channels, customer relationships, revenue streams, core resources, value-catalyzing core activities, important partners, and cost structure.

(2) Business model innovation based on the value chain perspective. Magretta (2002) argued that the variable value chain contains new opportunities for business model innovation, which can be reflected in the production and management activities of companies. Others believed that the new business model originates from a business ecology while product development innovation is the process of self-innovation. The Chinese scholars, Gao and Guan (2006) pointed out a modular structure in the value chain, which can be changed to realize business model innovation.

(3) Business model innovation based on value network perspective. This perspective places the focus on value creation while paying more attention to the relationship between companies and stakeholders in the network. For example, Wang (2011) proposed that all the stakeholders are internal modules of the value network in both independent and unified fashion, which can realize the innovative structure of business models through division and reorganization.

This study agrees with the value network perspective and provides a new research perspective on business model innovation, which well conforms to the actual situation of the Internet companies.

#### **2.1.2.2 Innovation path of business model canvas**

Osterwalder (2008) pointed out that the economic community holds that a business model is a self-sufficient solution for an organization on the financial level. If a company wants to maintain its competitiveness, it must either revise its business model or create a new business model to secure its survival and development. Every organization has a business model while a new business model changes the working environment of both for-profit organizations and non-profit organizations anytime, anywhere. Business model thinking is the best way to think systematically in response to the rapidly changing world.

Business model thinking can accurately identify the key elements of customer and work content, and clearly recognize how to help customers accomplish their required tasks.

Osterwalder (2008) proposed nine business model elements, which include customer group, value services, channels, customer relationships, revenue sources, core resources, key business, important partnerships, and cost structure.

**Customer group:**

Define the customer group which the company is targeting at. The customer group is the foundation on which the organizational structure depends. Without an effective paid customer group, no organization can survive in the long term.

**Value services:**

Product or service benefits provided by the organizations to the customer group. The ability to provide quality value services is an important criterion for customers to choose an organizational structure. There are six different value services: convenience, price, design, brand or market positioning, cost resolution, and risk reduction. Different products and services can solve different customer problems and meet their needs.

**Communication channels:**

Refer to how to communicate with target customers and convey value proposition to customers, including five roles: create market awareness of services or products, help potential customers evaluate products or services, promote customer purchases, deliver value to customers, and ensure after-sales satisfaction.

**Customer relationships:**

Types of relationships established with specific customer segments. Organizations must clearly define the types of relationships for customers. Is it personalized-service, automated-service, or self-service? Is it a single transaction or a subscription service?

Organizations should also clarify the basic goal of customer relationships. Is it to attract new customers, maintain existing customers, or tap more revenue from existing customer groups? For example, in order to maintain customer relationships, many companies have begun to emphasize creating products or services with customers.

**Revenue sources:**

Ways to earn revenue. Organizations must figure out which value services customers are willing to pay for, and accept payment methods that customers like. Revenue sources can

bedivided into two categories: one-time charges; continuous charges for items such as products, services, after-sales repairs or expenses.

**Core resources:**

Important resources that can continuously create value and provide to customers. Core resources include the following: human resources, physical assets, knowledge assets, and financial assets.

**Key business:**

Key business refers to the activities that an organization must implement in order to maintain its business model operations, including manufacturing, sales, and support.

**Important partnerships:**

Supply and marketing systems and partners required for the normal operation of the business model. Important partnerships refer to the interpersonal relationships that ensure the effective operation of business models.

**Cost structure:**

All the costs of running a business model. Obtaining core resources, implementing key business, and carrying out important partnerships will all cause costs to the organization.

We can get the practical tool that we want to explain-the business model canvas by combining the above nine modules. This is the basic way for organizations to provide value to customers, and also the innovation path of the business model canvas. Figure 2-2 shows the business model canvas.

The business model canvas is used to describe, transform, and innovate the business model of an organization, and presents a more systematic thinking model. As a systematic thinking method, it can promote the comprehensive relationship between business model innovation and stakeholders.

The business model canvas tool can be used to describe and analyze the organization and business model, and its visual sketching can simplify the analysis of the operation of complex companies. The business model will bring unique competitive advantages to the companies, and describes the entire business activity, making it an important component of the company's operating mechanism.

## 2.2 Overview of stakeholder theory

### 2.2.1 Connotation and definition of stakeholders

Throughout the business process, companies will establish interest relationships in the external environment. We call these entities stakeholders. Stakeholders are individuals or groups related to the companies. Freeman (1984) mentioned the Stakeholder Management Theory in *Strategic Management: Analytical Method of Stakeholder Management*, which refers to the company management comprehensively balances the interests of all the stakeholders through management activities. Stakeholders are closely involved in business management activities. Companies should pursue the comprehensive interests of all the stakeholders instead of the individual interests of certain entities.

In 1963, the Stanford Research Institute first proposed the stakeholder theory, stating that “there are certain interest groups in the company, without whose support the company will not survive”. In the past 30 years, researchers have defined stakeholders from different perspectives. The definitions of Freeman (1984) and Clarkson (1995) are widely accepted.

Freeman (1984) pointed out that individuals or groups that can be affected by the achievement of organizational goals and can affect the achievement of goals by organizations or individuals are referred to as stakeholders. Organizations or individuals who can affect the business activities are included in the scope of stakeholders.

Clarkson (1995) pointed out that certain material, human, financial or valuable investors in a company, namely the stakeholders, will face certain risks due to the company’s operating activities.

Researchers have broadened the stakeholder theory. Blair (1995) believed that all the individuals who contribute to the company’s assets and undertake risks for the successful development of the company should be included in the scope of stakeholders.

The Chinese scholars, Wan and Dai (1998) made a general definition of stakeholders: corporate stakeholders are individuals or groups that have one or more interests in a particular company. Just as company stakeholders are affected by company decisions and business activities, they also affect the company's marketing decisions. There is a bilateral relationship

between the company and its stakeholders.

Regarding the definition of stakeholders, Jia and Chen (2002) regarded the stakeholders as individuals and organizations that make certain investments in the company and bear risks. They will affect the achievement of the company's goals and will ultimately be achieved by the company.

This concept is more comprehensive when combined with the definitions of Clarkson (1995) and Blair (1995). In the meanwhile, they also pointed out that the natural environment is not a business environment and thus does not fall into the scope of stakeholders.

Zhao (2004) did not agree with this view and proposed that the natural environment of the company and the socially-unique investment are special, and will also affect the external image of the company.

### **2.2.2 Classification and description of stakeholders**

The classification of stakeholders contributes to scientific research on business ethics. Scholars at home and abroad have proposed different classifications of stakeholders. For example, Freeman (1984) believed that there are three types of stakeholders: (1) shareholders-ownership stakeholders who hold the company's stock; (2) groups with economic relationships-economically dependent stakeholders: such as company employees, product consumers, and company suppliers; (3) social relations-social interest stakeholders, such as government organizations, and other special groups.

Frederick (1988) proposed two types of stakeholders according to their influence on the company's operations: 1) direct stakeholders: stakeholders directly engaged in market transactions with the company, including shareholders, employees, and partners. 2) Indirect stakeholders: stakeholders who have no market transaction relationship with the company, such as government organizations, and media, etc.

Clarkson (1995) believed that stakeholders should be divided into two levels: primary correlated stakeholders and secondary correlated stakeholders. Shareholders, employees, customers, and partners are all key stakeholders. Clarkson (1995) proposed that the primary correlated stakeholders keep participation in the company's work, and guarantee the company development while the secondary correlated stakeholders indirectly affect the business of the

company, but have not played a decisive role in the development of the company.

Primary correlated stakeholders include business owners, employees, customers; secondary correlated stakeholders include social organizations, environmental agencies, special interest groups, and the media. Chen and Jia (1998) classified the company stakeholders into three categories by using the statistical and empirical analysis methods: core, general, and marginal stakeholders. Core stakeholders are closely related to the company and are indispensable for the company, including shareholders, and managers; ordinary stakeholders have good relations with the company but only have a general impact, mainly including company partners, consumer groups and government organizations; marginal stakeholders have the least impact on the company, including marginal interest groups and community resources.

Stakeholder judgment theory is mainly divided into two categories: multi-cone segmentation method and Mitchell scoring method as shown in Table 2-4. The multi-cone segmentation method is represented by Frederick (1988), Clarkson (1995), Clarkson (1995); the Mitchell scoring method is represented by Mitchell (1997) and Wood (1997). After summarizing the theories and types of stakeholders, we conclude that the stakeholder evaluation criteria should have the following three characteristics: legitimacy, rights, and urgency. Stakeholders can be divided into three categories according to their scores: (1) special stakeholders, who have legitimacy, rights and urgency, and are the company's main focus and close associates, including shareholders, employees and customers; (2) expected stakeholders who result from any two of the three characteristics and have legitimacy and rights, such as investors, employees, and government organizations; (3) potential stakeholders with only one of the three characteristics.

Table 2-4 The classification of the stakeholders

Multi cone segmentation method		Mitchell scoring method	
Author	Specific classification	Author	Specific classification
Freeman (1984)	The group that holds the company's stocks. The group with which the company has economic relationships.  The group that has a relationship with the company's social interests	Mitchell & Wood (1997)	Determined stakeholders, anticipated stakeholders, potential stakeholders (featured by any one of legitimacy, rights and urgency)
Frederick (1988)	Direct stakeholders, Indirect stakeholders.	Wan Jianhua, Dai Zhiwang (1998)	Primary stakeholders, secondary stakeholders
Clarkson (1995)	Key stakeholders, Secondary stakeholders	Chen Honghui, Jia Shenghua (2004)	Core stakeholders, potential stakeholders, and marginal stakeholders

The classification method proposed by Freeman (1984) is the most widely used and serves as the basis of many subsequent classification methods. The corporate stakeholder map proposed by him is regarded as a classic as shown in Figure 2-3. In this map, the company is at the center, and stakeholders are directly related to the company. This map not only specifies the stakeholders but considers the interaction between the company and the stakeholders.

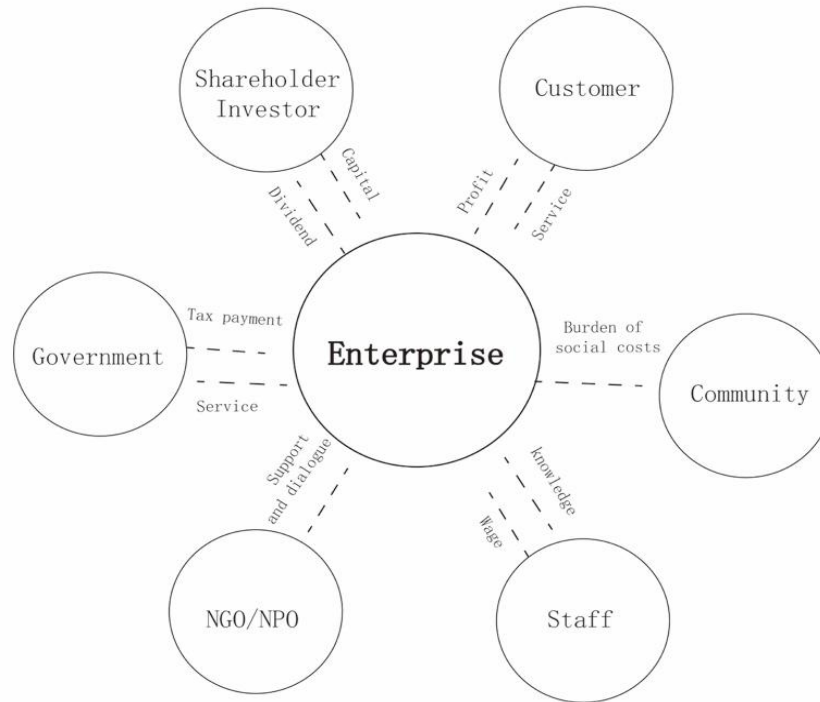


Figure 2-3 Relationship map of enterprise stakeholders proposed by Freeman (2006)

Source: Freeman (1984)

### 2.2.3 Quality of stakeholder relationships

#### 2.2.3.1 Connotation of relationship quality

The quality of relationships can also be called relationship quality, which is mainly applied to the research on the relationship between companies and customers, and the research on the interaction between companies, and between companies and their stakeholder groups. There are two different concepts as shown in Table 2-5.

Table 2-5 Definitions of relationship quality proposed by Chinese and foreign scholars

Research subject	Scholar (Year)	Definition
Relationship between enterprises and customers	Crosby (1990)	Customer trust and dependence on the behaviors of sales personnel based on previous satisfaction
	Liljander (1995)	Cognitive evaluation by customers



		after comparing the services they perceive and some internal or external quality standards
	Zhu Hang, Qi Wene, Wang Chunxiao,(1997)	Customer trust and satisfaction with companies and their staff
Relationship between enterprises and between enterprises and stakeholders	Smith (1998)	Satisfaction of individuals regarding their demands and expectations
	Maria Holmlund (2001)	Cognitive evaluation of the companies and relationships
	Liu and Yao (2005)	Common cognitive evaluation of the relationship of subjects on the satisfaction of their demands according to certain standard
	Yu (2009)	Indicator reflecting the overall relationship quality

This study adopts the concept of relationship quality and the relationship between stakeholders to investigate the relationship quality from the perspective of customer satisfaction with the relationship.

### 2.2.3.2 Research scope of relationship quality

Relationship quality refers to the user trust in the company and the satisfaction of the two parties to the transaction; the company should take measures to increase the user trust and satisfaction, and actively develop sound and lasting cooperative relationships with customers to promote the improvement of relationship quality and increase economic returns.

Relationship quality is first applied to the relationship between companies and customers, which refers to the B2C model; it is also applied to the relationship between companies, which refers to the B2B model. This relationship quality will involve a broader stakeholder structure and is thus more complicated. Crosby (1990) believed that it should include trust and satisfaction; Morgan RM. & Hunt SD. (1994) considered that it should include trust, satisfaction, and fulfilling commitments. Smith (1998) summarized previous researches and concluded that the

relationship quality should include at least satisfaction, trust, and commitment. Fynes (2005) proposed that it should include satisfaction and dependence, communication, commitment, and cooperation, and discovered that trust is the most common dimension in assessing the relationship between companies and suppliers.

Although researchers have different understandings of the concept of relationship quality, they basically recognize the scope of relationship quality as satisfaction, trust, commitment, communication, dependence, and management participation.

## **2.3 Enterprise ethics theory**

### **2.3.1 Definition of business ethics**

In the 1960s, a series of business corruption broke out in the United States, leading to multiple social movements. The research of business ethics began in the 1970s in the United States.

Sherwin (1983) thought that moral ethics is the basic criterion of human social activities. Lewis (1985) proposed a representative definition: ethics theory mainly provides systems, norms, and standards that guide companies and their employees. Hay (2006) believed that business ethics is “good or bad” decisions made by individuals, partners, companies, or business organizations. Joeffrcy (2005) regarded business ethics as a management decision-making behavior involving ethical values. Clarence (2008) extended it to the ethical criteria of human behavior, including social expectations, fair competition, aesthetics, and interpersonal communication. The Webster Dictionary explains business ethics as a discipline that explores good and bad and discusses the relationship between moral responsibility and obligation.

There are two interpretations of the concept of business ethics: the first is the moral code. For example, Zhu and Xu (1996) argued that the subject of business ethics is the company, and refers to the code for the company to handle the internal and external relations centered on business management ethics, and based on ethical standards, ethical norms, and practices. Huang and Wang (1996) considered business ethics as the ethical rules that the company’s employees and supervisors should follow when interacting with each other, and the ethical judgments of responsibilities and obligations that the company bears on society and nature.

Chen and Zhou (2008) pointed out that the research subject is business ethics, which is a

discipline. Business ethics has narrow and broad definitions. Narrowly, business ethics guide the rules of good and bad behaviors for companies and their members; broadly, business ethics refers to the rules of good and bad for the behaviors of all the parties involved in business activities. The second is to define business ethics from a structural perspective. Li (1994) believed that business ethics is a comprehensive moral phenomenon of the company, which is the general summary of all the moral concepts, moral standards and moral behaviors in the entire life course of the company. The organic composition of the three forms a dynamic unity of business ethics.

To sum up, researchers define business ethics as the normative standard for internal management and operations of the company and interpret the concept of business ethics from different perspectives as shown in Appendix 21.

To sum up, business ethics covers three aspects according to the definition of scale: (1) employee benefits which represent the internal management ethics of the company; (2) stakeholders (such as customers and partners) who evaluate the company and employees. The sound development of the company requires to secure the rights and interests of many parties, establish a good moral relationship, and help maintain the relationship between the two parties; (3) social values which involve a wide range of business ethics and the society. (Song Yuling, 2008).

### **2.3.2 Analysis of business ethics from the user perspective**

Through the review of domestic and foreign literature, scholars have widely evaluated the business ethical behaviors from the perspective of stakeholders. For example, Rashid (2003) divided business ethics into three categories: customer relationship ethics, employee ethics, and supplier relationship ethics. Ouyang (2003) considered the moral strength and ethical quality of the company from three levels: internal structure, middle-level structure, and expansion level, which involve employees, shareholders, customers, fund providers, suppliers, peers, communities, and society. Gu (2005), Zeng (2006), and Kong (2006) also evaluated the ethics capabilities of the company from three aspects: internal ethics, external ethics, and business ethics building capabilities. The internal ethics and external ethics of the company are related to the stakeholders of the company. Therefore, the research on stakeholder theory is a necessary part of research on business ethics.

Users, as one of the important stakeholders, are fast responders to the moral perception of

the company. The performance of business ethics will have an impact on the perception of user satisfaction. Good business ethics and will gain more user trust. There are two concepts to measure business ethical behaviors from the perspective of users: the first is a perceptual evaluation of the company ' s specific ethical behaviors, and the second is a perceptual evaluation of the company ' s overall ethical behaviors. (1) Perceptual evaluation of the company ' s specific ethical behaviors: Rust (2000) believed that business ethics based on the user perspective includes five aspects, namely community activities, privacy systems, environmental records, employment strategies and guarantee systems. Brunk (2010) established a customer-oriented measurement structure for business ethical behaviors based on customer perception ethics (CPE) theory as shown in Figure 2-3, which covers customers, employees, environment, local communities and economy, foreign communities, and business communities, and then extend to 36 subdivided dimensions. Although it comprehensively expresses the multi-faceted nature of business ethics, the measurement workload is complicated and corresponding measurement scales are lacking. Roman (2007) measured Internet business ethics, including safety, privacy, non-fraud, and commitment, by the Customer Perception of Ethics of Online Retailers (CPEOR). Cheng (2013) proposed an Internet business ethics test standard based on online e-commerce processes to improve the fairness of service restoration. However, since the measurement standards are mainly aimed at the Internet field, they have certain limitations.

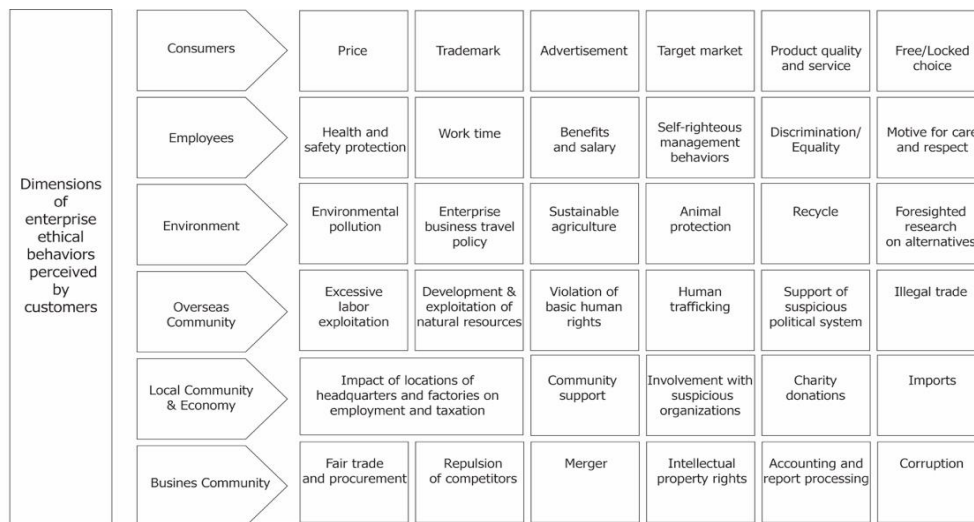


Figure 2- 3 Dimensional frameworks of customer perceived ethics

Source: Brunk.(2010)

### **2.3.3 Perceptual evaluation of the company's overall ethical behaviors**

Concerning the overall rational cognition of the company's ethical behaviors, Tsalikis and Seaton (2006) first proposed a relatively macroscopic index: the business ethics index, which covers customer opinion index and customer belief index, thus constituting the personal/past, personal/future, others/past, and others/future elements. Each element is divided into five metrics: A. Very immoral, B. A little immoral, C. Immoral, D. Basic moral, E. Very moral, which are expressed in different scores. Finally, the ethical level of the company is evaluated by the scores. BEI is a tool that measures the change of user attitudes to business ethics over time and has been used in 20 countries. However, this statistical result cannot fully reveal the specific moral level of the company.

## **2.4 Overview of business performance**

### **2.4.1 Definition of business performance**

At present, the concept of business performance is diversified. Profitability, asset operation level, debt repayment ability, and subsequent development ability are the main indicators of business efficiency levels.

Venkatraman & Ramanujam (1986) believed that business performance includes three parts: financial performance, business performance, and organizational performance, which are concepts commonly used in financial performance and traditional strategic research, such as the increase in the growth rate of net profit, product market share, and production management index; the quantity, quality, and profitability of products that are completed in a certain period. Lumpkin & Dess (1996) considered that in addition to traditional financial indexes, business performance should also be based on the satisfaction of all the stakeholders in comprehensive performance assessments.

According to Homburg & Pfliders (2000), company performance can be divided into two categories: market performance and financial performance. Market performance includes customer satisfaction, customer value, ability to retain existing customers, appeal to new customers, expected growth, and market share. Financial performance is the statistics and evaluation of sales volume.

Scott (1992) claimed that social performance is considered as a social response to the company's behaviors, and emphasized the impact and constraints of business processes on stakeholders. Wood (1991) argued that the social performance of the company includes the principles of social responsibility, the level of social response, and the activities or outcomes related to the company's social relations.

This study mainly selects two performance indexes, including business economic performance and customer satisfaction, as the evaluation indexes of the innovation of Internet product development business models.

## **2.4.2 Scope and content of business performance**

### **2.4.2.1 Evaluation of economic performance**

In the narrow sense, the evaluation of economic performance focuses on the indexes that distinguish performance results. In the broad sense, the evaluation of economic performance incorporates organizational structure and operating mode factors, and refers to the operating efficiency and performance of the company during a certain period of operation. Common financial indexes include ROI, ROA, ROE, and net profit.

However, some scholars believe that traditional financial indexes do not consider the key factors: product quality, service quality, and user coverage. Then, they put forward the Economic Value Added Index (EVA) to measure the performance of the company, which reflects the net operating profit with all capital costs and taxes deducted. Li (2006) performed an empirical analysis of listed companies and concluded that compared with traditional financial indexes, EVA is more scientific and comprehensive.

### **2.4.2.2 Measurement of customer satisfaction**

Scholars have different understandings of the concept of customer satisfaction:

Johnson & Fornell's (1911) understanding of customer satisfaction: a comprehensive assessment of the purchased products or service experiences in the company's past, present, and future.

Harward (1969) argued that customer satisfaction refers to customers' comparison of the cost of purchasing a product or service with their expectations of the product or service.

Wirtz & Miller (1977) believed that comparing the perceived performance of a product or service to expected performance can measure customer satisfaction.

Churchill's (1982) perception of customer satisfaction is the result of the comparison between product purchase cost and product use efficiency.

According to Bearden & Teel (1983), customer satisfaction refers to how customers like or dislike a product or service after consumption, and is related to experience and attitude.

Folks' s (1984) perspective on customer satisfaction: direct emotional expression of the value of a product or service. Bolton & Drew' s (1991) understanding of customer satisfaction: customer experience response which is the emotional expression of customers, and may have an impact on the evaluation of product/service quality, consumption, and behavioral intentions.

Engel & Blackwell (1993) believed that customer satisfaction is the judgment of customer expectations and actual experience results.

According to Philip Kotler (2001), customer satisfaction is a state of mind that is a function of the difference between perception and expectation.

According to related theories, customer satisfaction mainly comes from the following two aspects: the first is to treat customer satisfaction as a process, and the second is to treat customer satisfaction as a psychological state, as shown in Appendix 21.

Customer satisfaction is the relationship between economics and some related variables. Finally, the variables and the total customer satisfaction are calculated.

The first customer satisfaction balance (SCSB) was established in Sweden in 1989 as shown in Figure 2-4. On the left are two causal variables of customer satisfaction, and on the right are two outcome variables of customer satisfaction.

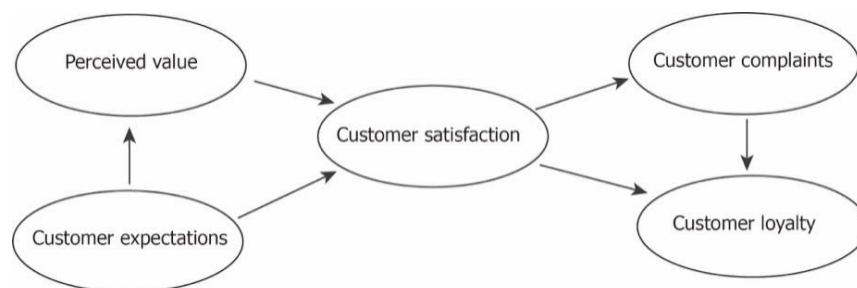


Figure 2-4 Swedish customer satisfaction barometer

Source: <http://wiki.mbalib.com/wiki/SCSB>

In 1994, the United States established the American Customer Satisfaction Index (ACSI) as shown in Figure 2-5. ACSI has become the basis for customer satisfaction indexes in other countries and has a profound impact.

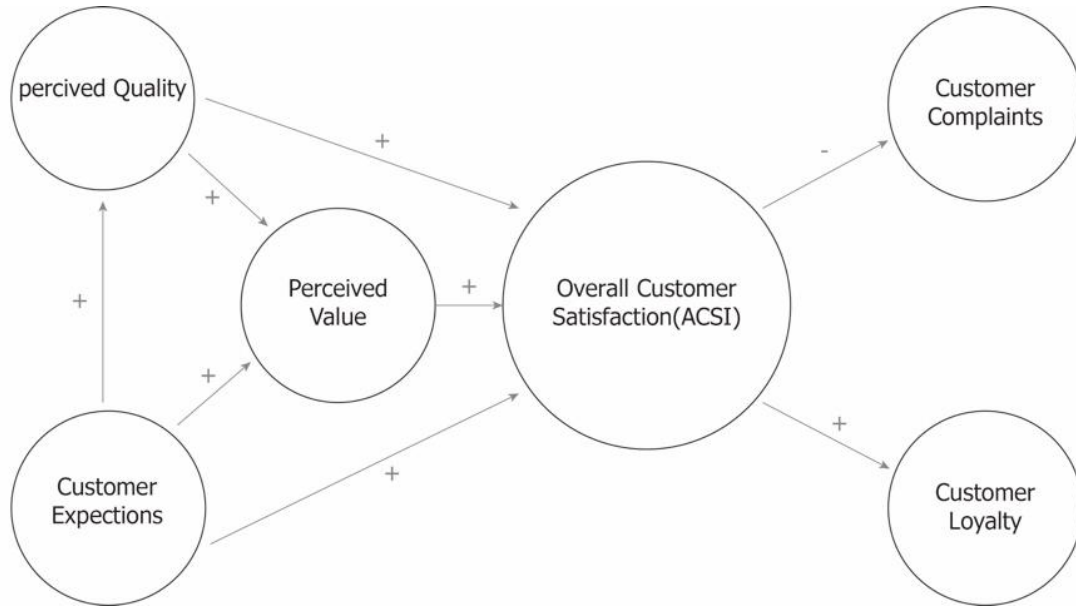


Figure 2- 5 American customer satisfaction index

Source: <http://wiki.mbalib.com/wiki/ACSI>

It was not until the end of the 20th century that relevant research was conducted in China. Wang and Yan (2000) built the customer satisfaction evaluation system based on the results of existing customer satisfaction evaluation research. Song and Li (2002) comparatively studied the existing customer satisfaction evaluation system, and improved the customer satisfaction index system, which greatly enhanced the accuracy of the customer satisfaction evaluation system. In 2015, China introduced the first Customer Satisfaction Index (C-CSI) and its measurement standards as shown in Figures 2-6 and 2-7. C-CSI is universal, which helps companies lay the foundation for future quality growth.



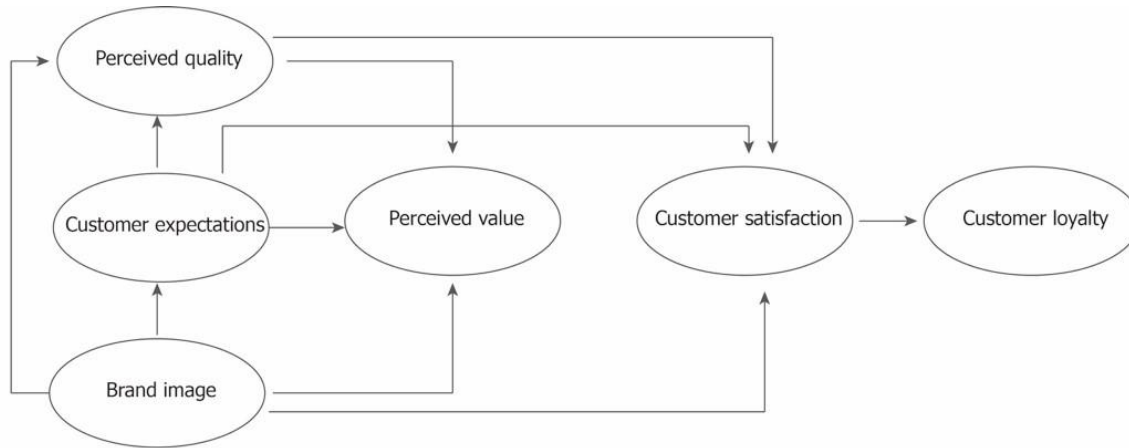
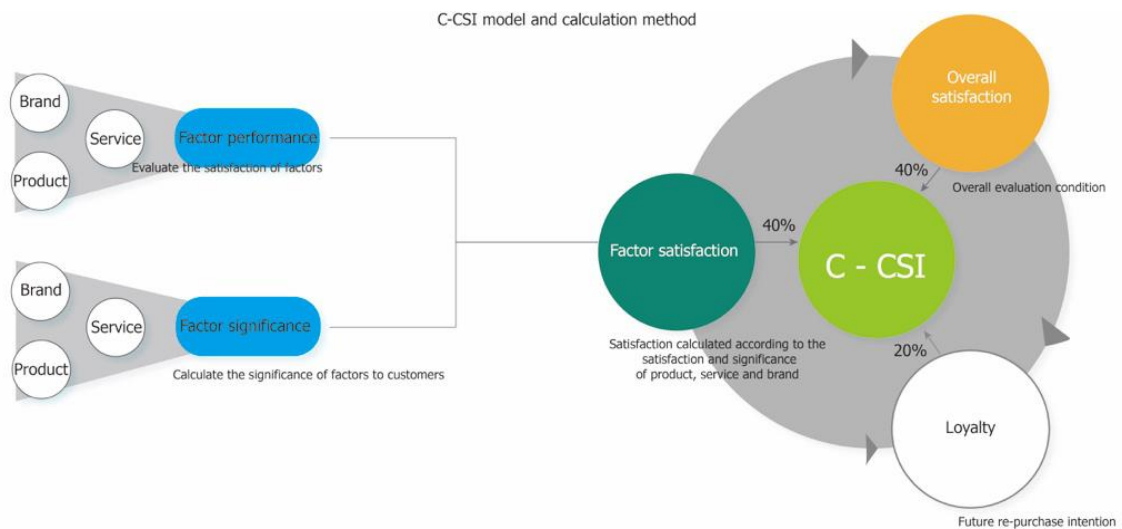


Figure 2-6 Chinese customer satisfaction index

Source: Pei, Tang, and Xian (2006)



C-CSI calculation method:

$$C-CSI(\text{China Customer Satisfaction Index}) = (\text{Overall satisfaction} * 40\%) + (\text{Factor satisfaction} * 40\%) + (\text{Loyalty} * 20\%)$$

\*Overall satisfaction score: Proportion of (Very satisfied) and (Satisfied) answers in the overall satisfaction answers in the questionnaire (TOP2)

\*Factor satisfaction score :

Figure 2-7 Calculation method of the Chinese customer satisfaction index

Source: <http://baike.baidu.com/item/Chinese Consumer Satisfaction Index>

Product purchase decisions come from user satisfaction with the products, communication satisfaction and brand trust. User experience satisfaction is based on the comparison of customer experience and expectations. The development of the company depends on the realization of user satisfaction and loyalty. Loyalty will prevent users from actively changing the brand they like. Instead, they will provide suggestions through complaints to help brands improve service quality.

High-satisfaction users are willing to actively share the product experience with friends. Carrillat (2009) discovered that a satisfactory user experience can improve the recognition of the company' s products or services.

According to the research on the relationship between user scale and business ethics, Creyer (1997) and Trudel (2009) believed that there are four influencing factors: the importance of business ethics, encouraging companies to strengthen ethical building after user purchase behaviors, and warning unethical companies after user purchase behaviors, and expecting companies to take responsibility. Stanton, Etzel, and Walker (1994) divided the definition of perception in three aspects: the process of receiving, understanding, and outputting data. The perception process takes a short time and contains a small amount of information, but will have a great impact on the satisfaction of the user experience (Vinai, 2002).

Attaching importance to business ethics helps build a good reputation, and the products or services of these companies are more easily accepted by the public. Business ethics has become a special symbol that can strengthen the identity of users, and easily leave a good impression on the company. Roman (2005) proposed that employee behavioral ethics is first recognized by customers, which directly affects customer satisfaction.

## **2.5 Guiding significance of theoretical relationship summary on this paper**

### **2.5.1 Literature summary**

#### **2.5.1.1 Business model innovation and stakeholders are mutually dependent and influencing**

Business model is the internal logic of value creation and sharing by the companies, and realizes the value distribution system to stakeholders. The interests of different stakeholders are different, and different interest propositions depend on the realization of business interests. The development goal of the company is to maximize value creation and distribute the value results to all the stakeholders in the value relationship network, thus realizing value sharing and collective balancing. The collective balancing refers to the unity of individual and collective expectations, which refers to achieve both individual and collective satisfaction.

Therefore, the relationship between stakeholders and enterprises is exhibited as a

cooperative game. However, this balanced state between the two parties is not permanent and stable. With changes in the business environment and social progress, the demands of stakeholders have also changed, which breaks the original balanced state. The stakeholders and the companies enter a new round of gaming. In order to meet the new appeals of stakeholders, companies will also carry out a new round of business model innovation.

The broad stakeholder definition of Freeman (1984): Stakeholders and companies are also mutually dependent. In other words, business models and stakeholders influence each other.

### **2.5.1.2 Relationship between stakeholders and business performance**

Freeman (1984) argued that companies are shared by stakeholders. Before the emergence of stakeholder theory, many scholars have explored the relationship between stakeholder and business performance. Stakeholders have been involved in research on the social responsibility of the companies. For example, the KLD index (Kinder, Lydenberg, and Domini & Co. Inc. 1950) was originally an index system used by KLD analysts to measure the social responsibility of the companies, and mainly includes company and community relationships, employee relationships, natural environment, product safety and responsibility, and citizen obligations. Here the social responsibility of the companies includes the responsibility of the companies to the stakeholders.

The researchers analyzed the relationship between social responsibility and the economic performance of the companies, which refers to the relationship between stakeholders and business performance. Although researchers have different definitions of stakeholders, most researchers believe that promoting communication between companies and stakeholders has a positive impact on business performance. For example, Waddock & Graves (1997) found in the relationship between KLD index and financial performance that KLD and business performance in the previous year are positively correlated; Xiao (2004) used case analysis, regression analysis and other quantitative analysis methods to analyze the survey data, and found that stakeholder participation in business governance is conducive to improving the company ' s economic performance, customer satisfaction, and governance performance.

### **2.5.1.3 Relationship between business ethics and business benefits**

Marxism believes that moral ethics arises from the economic relations of people ' s production and exchange. Without the foundation of social relations, morality is

meaningless. Without moral standards, people will fall into conflicts of interest.

There is a dialectical and unified relationship between ethics and interests. In the meanwhile, Marxist ethics also points out that ethics has a certain regulating effect on benefits, and that ethics is relatively independent once generated. It is sometimes out of sync with benefits. Backward ethics will restrict the development of socio-economic relations while and advanced ethics will promote the development and progress of material benefits.

Similarly, there is a dialectical and unified relationship between business ethics and business benefits. In order to obtain long-term benefits, the companies must attach importance to the construction of business ethics, consider themselves as a unity of brokers and social individuals, and restrict their behaviors by ethical norms and ethical principles, thus better creating wealth for all the stakeholders.

#### **2.1.5.4 Conceptual model**

Silvia B. & Carl MW. (2015) believed that the essence of corporate innovation is to attract and satisfy customers. The success of business model innovation depends on whether it can achieve good economic performance. The subject of business model innovation is the stakeholders. The code of conduct and norms governing inter-company relations is business ethics, and the quality of stakeholder relationships is an inductive summary of this interactive relationship. This study proposes the basic conceptual model of business model innovation structure, which includes four elements: business model innovation, business ethics, quality of stakeholder relationships, and business performance.

Hypotheses: In the value creation activities, business model innovation involves business ethics, and affects the quality of stakeholder relationships, thus further influencing the positive growth and reverse decline of business performance; business performance has a feedback effect on business model innovation and regulates the business model innovation, thus establishing the basic conceptual model of business model innovation structure as shown in Figure 2-8.

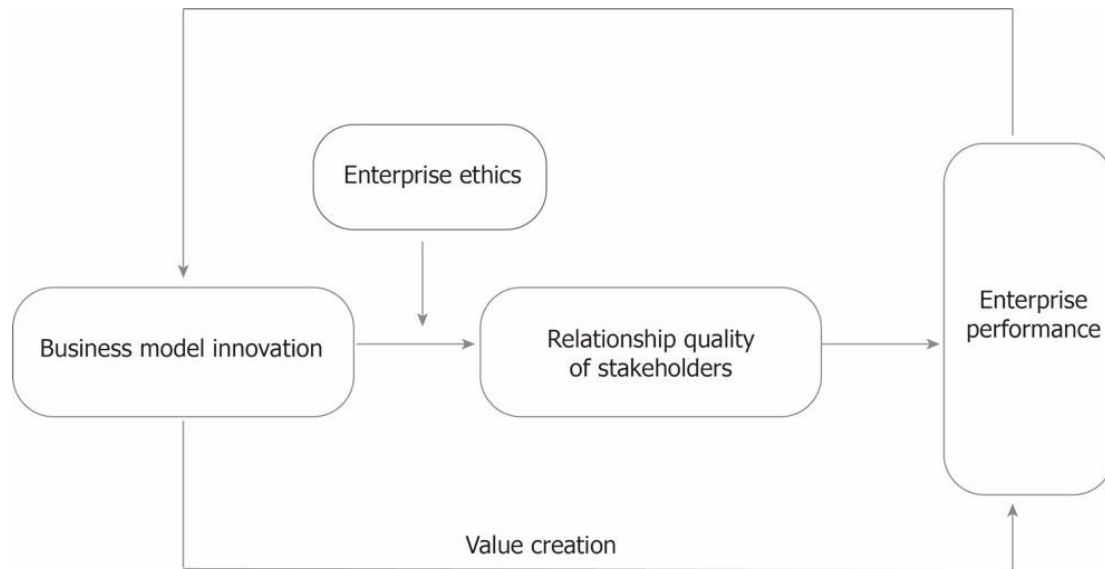


Figure 2-8 Basic conceptual model of business model innovation structure

In the subsequent research, we will enrich the elements and perform in-depth research based on the basic conceptual model of the business model innovation structure.

### 2.5.2 Guiding significance of this study

(1) Investigate the relationship between business ethics, stakeholders, and business performance of Chinese Internet companies in the process of business model innovation from the perspective of stakeholders.

Under the influence of stakeholders, the development of business model value innovation of the company will change accordingly, which will affect the business performance. Therefore, this study explores the business model innovation, and balance the quality of stakeholder relationships through the active adjustment of business ethics in order to achieve the economic performance and organizational performance of the companies simultaneously, and ensure the development momentum of business model innovation.

This study agrees with the research based on the value network perspective in terms of the cognition of business model innovation; agrees with China's Customer Satisfaction Model (C-CSI) and AHP concerning customer satisfaction to observe the specific manifestations of the customer satisfaction of different companies. Regarding the economic performance, this study agrees with the conventional financial assessment method.

(2) The research of Freeman and the Chinese scholars Chen and Jia is highly practical for classifying stakeholders based on the current development of Chinese Internet companies. On this basis, this study classifies stakeholders based on the characteristics of Chinese Internet platform companies. The CPE scale proposed by Brunk (2012) comprehensively covers most of the stakeholders and can serve to measure business ethics. With this reference, this study conducts a data survey on business ethics.

## **Chapter 3: Research methods and design**

### **3.1 Research methods**

This paper adopted the following research methods: literature review, questionnaire survey, interview, case analysis, data analysis, and empirical research.

Based on previous researches on business model innovation, performance, and the dynamic impact of stakeholders, this paper designed the measurement indexes for business model innovation, stakeholder interaction, and business performance.

In order to improve the reliability and validity of the survey results, the principles of the questionnaire design are as follows: (1) Use a validated survey scale and make reasonable improvements; (2) learn from professionals, hold discussions, collect opinions on questionnaire scales and measurement items, modify and improve them accordingly; (3) in order to verify the legitimacy of questionnaire settings, conduct small-scale predictive testing of questionnaires, modify and delete the items based on the results to form the final questionnaire before starting large-scale questionnaire survey (see Appendix 3).

### **3.2 Case selection**

In the cases of three Chinese Internet companies, including Baidu, Alibaba, and Tencent, this paper studies the influencing factors of growth performance in the business model innovation of the three Internet companies. Then, the value growth performance of the Chinese Internet companies are analyzed in the interactive influence of business model innovation and stakeholders. Research content one: the contradiction of business model innovation with business ethics and stakeholder relationships. Research content two: dynamic impact of business model innovation and stakeholders on performance growth.

The interaction of Chinese Internet companies in business model innovation and the bilateral subject of stakeholders have become the perspective of growth performance.

### **3.3 Research design**

#### **3.3.1 Data collection**

(1) Primary data: mainly acquired through questionnaire surveys and in-depth interviews.

(2) Secondary data: mainly acquired through industry data, such as association reports, statistical yearbooks; secondary data of case companies mainly include internal data, yearbooks, and financial reports.

#### **3.3.2 Data processing**

(1) Qualitative data processing mainly refers to analyze and describe the content of interview data through storytelling.

(2) Quantitative data processing refers to process the questionnaire data through descriptive statistical analysis and regression analysis.



## **Chapter 4: Field Study**

### **4.1 Status and confusion in business innovation of Chinese Internet platform enterprises**

#### **4.1.1 Development descriptions of the Chinese Internet market**

It is shown from the data released by the China Internet Network Information Center (CNNIC) that there are about 800 million Chinese netizens, including 760 million mobile Internet users, accounting for nearly 98%; there are about 209 million rural Internet users, accounting for 27.0%; and 563 million urban Internet users, accounting for 73.0%.

As shown from such data, in 2016, the volume of China's digital economy driven by the Internet reached 2.938 trillion euros, exceeding the total volume of Japan and the United Kingdom, and ranking second only to the United States. The nominal year-on-year growth rate was higher than 18.9%, which was 2.4 times, 3 times and 3.1 times that of the United States, Japan, and the United Kingdom. The growth rate was significantly higher than the GDP growth rate, and its contributions to GDP growth have reached 69.9%.

From January to May 2018, China's Internet enterprises above the designated size have achieved a total business revenue of 43.225 billion euros, marking a year-on-year increase of 23.9% compared with that in last year. Besides, the growth rate rebounded by 3.9% over the same period. As shown in Figure 4-1, the innovative development of the Internet platform economy has promoted a steady increase in revenue from Internet information services. As shown in Appendix 5, the Internet has become the main driver of China's economic growth.

With the explosive growth of mobile Internet, in addition to convenience and benefits of the Internet, customers are also faced with many troubles and disturbances, while the customer complaints are also increasing. Online sales, return and replacement difficulty, false delivery, poor after-sales service, and online fraud have plagued the majority of online customers. In 2017, the number of complaints involving online customers nationwide increased by 48.02% compared

with that in 2016.

#### **4.1.2 Development of China's Internet**

The National Science Foundation of the United States acknowledged in April 1994 that China's Internet was fully connected to the world, which marked the official start of China's Internet era. After years of development, the international economy, social development and public life have prospered under the influence of China's Internet. The development of China's Internet can be divided into four stages.

##### **4.1.2.1 Rise and exploration stage (1987-1994)**

On August 25, 1986, the first international email was sent from China to the Western European Nuclear Centre in Geneva, Switzerland. In August 1989, the Chinese Academy of Sciences undertook the construction of the predecessor of China Science and Technology Network (CSTNET). In 1991, the United States proposed to include China in the Internet cooperation program. The earliest sign symbolizing the birth of the Internet in China was that in April 1994, China accessed the full-featured Internet.

During this period, China started from the construction of the basic network and key resources, and gradually built four backbone networks with international export capabilities—China Education and Research Computer Network, China Public Computer Internet, China Science and Technology Network and China Jinqiao Information Network. In addition, China established its top national domain name operation management system and began to provide .CN domain name registration and resolution services. Chinese Internet has gradually developed from information retrieval to full-field access and expanded from scientific research applications to commercialization.

##### **4.1.2.2 Exploration stage of business models (1994-2001)**

As the network project in Zhongguancun accessed the Internet in April 1994, China had its real Internet access. The Internet has gradually penetrated into people's lives and developed rapidly. In the meanwhile, a large number of businesses and applications based on the Internet have emerged. By the end of 1996, the number of Internet users in China had reached 200,000.

Since 1994, the Chinese government has constructed the infrastructure and backbone

networks of the Internet. From 1995 to 1996, private capital was also involved in the infrastructure construction of Internet. “Beijing Yinghaiwei Technology Co., Ltd.”, the main ISP (Internet Service Provider), initially formed the national backbone network.

As the international community gradually recognized China’s Internet, the Internet has grown at a fast rate. The listing of YAHOO! on April 12, 1995 was a great encouragement to many Chinese Internet practitioners. The three major Internet portals, including Sina, Sohu, and NetEase, were born, while a number of Internet enterprises, such as Baidu, Tencent, Alibaba, Shanda, and JD.com, were established. The listing of China Netcom in Nasdaq promoted the wave of Internet entrepreneurship in China.

However, the excessive optimism and unreasonable pursuit of new technologies and applications in the short term resulted in the Internet bubble. As the profit model of the Internet was not yet clear, the Internet enterprises around the world entered a depression period, and many of them were closed down in less than two years. Facing such difficulties, the Monternet program of China Mobile stood out in the industry. It provided platform and information channels to support Chinese Internet enterprises through difficulties and rescued the Internet from the bubble. In addition, it transformed China’s Internet into a sustainable development mode and won the time to explore the profit models. In 2002, Sohu, Sina and NetEase achieved net profits, and Chinese Internet enterprises have established their own business models.

#### **4.1.2.3 Rise stage of social value (2002-2010)**

At the beginning of the second Internet development wave in China, many enterprises focused on profit models, and engaged in innovative development of profit models vigorously. They kept exploring new business models and set off a new development wave. Besides, the size of Chinese netizens was expanding rapidly. In 2005, the size of Chinese netizens increased rapidly from 620,000 to over 100 million.

After accessing the full-featured Internet, China’s Internet has flourished. For example, the C2C platforms, Taobao, Shanda and Ctrip, were successfully listed, while the profit models of China’s Internet were dominated by SP business (SMS, voice, and ringback music), online games, and online advertising. With the multi-stage efficient progress of infrastructure construction, the main business models of China’s Internet have gradually been established and

developed, while the social value of China's Internet has risen, which marked breaking growth in the market value of the Internet.

From the original blog websites to the portal websites open to local websites, Internet enterprises shared the fruits of the Internet, while online media became the main carrier and display channel. Since 2005, the Internet has been gradually transformed into a gathering and source of gossips and hot events. In China, the Internet has been used as a force to promote social and political changes. For example, the Internet reports on the death of a young man from Hubei Province, Sun Zhigang (in 2003, Sun was detained by the law enforcement of the Guangzhou Municipal People's Government on the grounds that he was a vagrant without a temporary residence permit), the 2007 "Best Nail Household" incident (to force residents to move away, Chongqing real estate developers excavated foundation pits around their homes, making it a big nail-like island more than ten meters above the ground), the 2009 "Fishing Enforcement" incident in Shanghai (the driver Sun Zhongjie gave a passerby a free ride out of kindness, but was judged as illegal operation and encountered the fishing enforcement. The 18-year-old driver Sun cut his fingers to prove his innocence) have promoted the legal system construction and social changes, and reflected strong responses from the public. The Internet has gradually been socialized, while the number of users increased rapidly from about 33.7 million in 2001 to 457 million in 2010, which implies that netizens' trust and dependence on the Internet were increasing.

#### **4.1.2.4 Golden stage of mobile Internet (2011-2014)**

The widespread installation of smartphone operating systems and the emergence of mobile application stores greatly enriched the mobile Internet access and triggered an explosive rise in mobile Internet. In 2011, the number of mobile Internet users in China reached 356 million, which surpassed the number of computer users for the first time. Therefore, China has entered the era of the mobile Internet.

During this stage, the mobile Internet transformed the information in the life service industry into data, and enabled users to not only understand what was happening but participate in these hot events in a timely manner. The life service industry has fully entered the Internet era and completed its digital transformation. The mobile Internet has brought about huge changes in life

based on the data of the living services industry. Later, the innovative applications, such as Weibo, WeChat, Yixin, and Yu'e Bao, also contributed to the real-time communication function of China's Internet, and China's Internet culture was comprehensively innovated, which was reflected in the characteristics of immediacy, sociality, and openness.

In particular, the service industry reached a consensus on the integrated development of online and offline channels. Represented by the O2O websites, such as Eleme, Meituan, and Dazhong Dianping, the Internet penetrated into different industries and became the basic infrastructure of the society, while the platform enterprises became the biggest winners. In the 2013 Double Eleven Shopping Festival, the overall Alipay transaction volume of the mobile Taobao increased by 560% year on year. By the end of 2013, the number of mobile Alipay users exceeded 100 million. Mobile payment has boomed in the mobile Internet era. In the meanwhile, the Chinese Internet market started to explore the business models by opening channels and locking scenarios.

For example, Xiaomi and LeTV developed the new business model of "Smartphone + Internet Services". With the cost-effective characteristics of smartphones, they expanded the promotion and diffusion scope of corporate Internet applications. Xiaomi has thus achieved great success and become a rising rookie of Internet enterprises.

At this stage, the diverse achievements of China's Internet in different fields have astonished the international Internet market, such as the number of Internet users, the sales volume of personal computers, the sizes and capacities of enterprises.

#### **4.1.2.5 Integration, innovation and ecological construction stage of China's Internet (2015-)**

According to the data released by the China Internet Network Information Center (CNNIC) at the end of 2015, China has already stepped into the leading ranks of the global Internet in many aspects, such as Internet users, broadband penetration, and IGDP size. Through more than 20 years of rapid development, China's Internet has achieved great results. However, as China's Internet keeps reshaping the technology, some emerging technologies, such as big data, cloud computing, artificial intelligence, and virtual reality, have restructured the industrial spatial ecology and broadened some emerging development areas. Generally, the three major keywords at this stage are integration, innovation, and ecology.

With the overall gradual expansion of the Internet and the increasing maturity of business models, Internet ecology will become more diversified in the future. Different Internet ecologies depend on different business models. Based on e-commerce, intelligent hardware and artificial intelligence, multiple Internet ecologies provide users with integrated ecological services. The growing maturity of ecology will also become the cornerstone of new business models for Internet enterprises in the future.

#### **4.1.3 Review on the industrial development of China's Internet**

The role of Chinese Internet enterprises in industrial development cannot be neglected. With the joint action of the industry, the Internet economy has developed rapidly, while the industry has brought opportunities for innovation. Today, as an “Internet power”, China has changed its status in the international community but this process is not smooth. Through continuous exploration and joint efforts, China has reached its current prosperity and even surpassed the international community.

##### **4.1.3.1 Imitation, learning and exploration stage**

The broad market prospects of the Internet have stimulated the first Internet development wave in China. A number of Internet enterprises represented by NetEase, Sohu and Sina, were successively established while plentiful central news websites, such as People.cn and Xinhua.com, were founded.

1997 was called the birth year of China's Internet. From then on, many well-known Internet enterprises in China began to imitate American Internet enterprises and carry out exploration and innovation. The three giants in the early stage of China's Internet, including Sohu, NetEase, and Sina, were all established in this period by drawing on foreign business models. In January 1997, Chaoyang Zhang, a Ph.D. student at the Massachusetts Institute of Technology in the United States, first launched the ITC, and then developed the convenient search engine Sohu in 2018; Lei Ding also founded NetEase in June 1997; in 1998, Sina was established by Zhidong Wang.

At present, the new giants in China's Internet, including Baidu, Alibaba, and Tencent (BAT), have also developed innovatively based on imitation and learning. Robin Li returned

from the United States in 2000. He concluded that China's Internet had a market gap in Chinese search engine services, which had bright prospects for development. Therefore, he returned to China with his own patented search technology and started China's largest search engine by imitating Google. Alibaba is a typical representative of the successful localization of Chinese Internet enterprises. In 1999, Jack Ma established Alibaba in Hangzhou by imitating eBay, defeated eBay through the free marketing strategy and created China's largest e-commerce platform Taobao. Through imitation and learning, QQ developed into China's largest instant message application based on local innovation. In 1997, Pony Ma discovered that the instant messaging brought by ICQ (online chatting tool) had a strong market appeal, but there were still some fields for improvement. Pony Ma tried to develop its Chinese version and launched the OICQ (online chatting tool), which marked the birth of QQ, the most successful instant messaging software in the early stage of China's Internet.

Chinese Internet enterprises have made a lot of imitation and innovation in the early stage, which was the beginning of learning and the basis of innovation. They were constantly improved during the competition.

#### **4.1.3.2 Growth and prosperity stage**

The Chinese Internet embarked on a development path with Chinese characteristics. The Internet information service industry system was gradually established, while the Internet enterprises specializing in search engines, e-commerce, instant messaging, and social networks, rose rapidly. The business models in major areas, such as Internet access, Internet marketing, e-commerce, and online games, were preliminarily formed. In addition, representative Internet enterprises in various fields grew at a fast rate, and the co-development industrial structure of the entire industry chain was basically established; the E-business Era has been launched.

From 2002 to 2004, the online games and e-commerce sprang up. Online games became the most profitable field in the Chinese Internet and accomplished a number of Chinese online game development and operation enterprises, such as Shanda. At this stage, the innovative exploration of business models for Chinese online game enterprises was completed. During the SARS strike in 2003, Alibaba and Jingdong showed the unique charm of e-commerce, which marked the strong development of online e-commerce enterprises.

From 2005 to 2007, the we-media enterprises started to appear on Chinese Internet. The Internet video websites represented by Youku and Tudou and the Internet grassroots we-media platforms represented by Tianya Forum and Sina Weibo rose to stage, which laid the foundation for the business model exploration of Chinese Internet we-media enterprises.

After four to five years, multiple Internet enterprises, including Baidu, basically established their business models and improved their profit levels. Following NetEase and Sina, they were listed in the United States and set off the new development wave of Chinese Internet, which promoted the prosperous development of Chinese Internet enterprises.

#### **4.1.3.3 High-speed global rise stage**

Due to the quantum leaps of science and technology in China, Chinese Internet enterprises enjoyed superior production and living environments. Four of the top ten leading Internet enterprises in the world were Chinese enterprises. In other words, China can rival the world's high-tech superpowers or even surpass the United States. Alibaba, China's Internet e-commerce enterprises, quickly branched into the international trade market. In the meanwhile, China's online gaming industry has shifted from introducing foreign games to developing original Chinese games in the online gaming market and then expanded into the international market on a large scale.

Since 2001, Alibaba has achieved rapid growth. While Amazon spent 14 years on achieving a 50% penetration in the United States, Taobao spent nine years in China on realizing faster growth. Alibaba was not only the first e-commerce platform in China but also the largest e-commerce platform in the world. In 2016, the Tmall Double Eleven Global Shopping Festival covered 235 countries and regions, and the total transaction volume exceeded 15.591 billion euros. In addition, Baidu has also been globalized in the fields of big data, VR/AR, and artificial intelligence. Tencent's businesses in instant messaging, social networking, entertainment, video, and cloud services have built a service ecosystem for global users and were committed to achieving global coverage. China's growth rate and scale in Internet fields of e-commerce, mobile payment, mobile social networking, and mobile travel have exceeded some developed countries. Chinese Internet enterprises have entered a brand new development stage. Under the innovation-driven development requirement, Internet enterprises will face more challenges in



going global.

#### **4.1.4 Panoramic description of the business model innovation of China's Internet**

##### **4.1.4.1 Description of the development patterns of business models**

The continuous innovation of the business models by Chinese Internet enterprises has also witnessed the advancement process of China's Internet. Due to the progress of technology and business models, the role of the Internet was changing at different times. The evolution process of the business models in Chinese Internet enterprises can be summarized as the following five parts.

###### **(1) Web 1.0 with multiple rising powers**

Business model 1.0 is a platform+free model: the Internet, as an information provider, completes the one-way information transmission from "Internet-people". Yahoo's open and free business model has set an example for Internet enterprises around the world and swept the world in a few years. The free model has been reputed as an ace of subverting traditional business models.

Free is a new business model. The business model is a composite model that includes the products, the customers, and the marketing methods. Different from the traditional business models of buying at low prices and selling at high prices, the free model has attracted a large number of users to free products, and then made profits through advertising and value-added services.

The platform+free model first accumulated a large number of users through free products, and then made profits from advertising and value-added services. For example, targeting at eBay's payment model, the Taobao platform was also open. Specifically, businesses can enter the platform for free while customers had the right to browse products for free. Once a transaction occurred between the two parties, a corresponding service fee was charged.

Another example is the social product QQ, which has gathered a large number of members as it was free. Using this advantage, Tencent proposed paid value-added services such as QQ shows and can achieve profits for games, music, film, and television. Through the agglomeration effect, the platform used its existing customers to attract new customers and set commissions.

The bilateral or multilateral market players promoted each other and progressed in synergy.

(2) Community economy in Web 2.0

The community economy has completely changed the entire business from production to consumption and formed a brand new business model. As an Internet product model, Web 2.0 was based on the user-created content on the Internet platforms, which was a completely different form from before. The creators of the contents were no longer the Internet, but the users. Instead, the Internet provided a platform for the users and helped them reach their audience.

The community business model formed in Web 2.0 provided users with a sharing space in which people can get together and share everything, including hobbies and value propositions. The value of the community did not lie in selling products, but in building a community brand. Depending on the value proposition, vision and social network, the product value can be maximized in the online ecosystem and transformed into commercial profits.

In order to attract users, the Internet enterprises not just focused on the freedom, but aimed to increase user dependence, which means user stickiness. The popularity of we-media has made the content unprecedentedly important, and the low-cost characteristic has triggered the explosive growth in the number of we-media. The “competition for online traffic” has become the focus of media. The transmission between users and the linkages between media were the main entrances of online traffic, and also a key link in generating value for the enterprises.

The temporal and spatial limitations were broken by the mobile Internet, while the traditional model was gradually replaced. People were more willing to accept direct interactive online platforms. While remaining interested in the price and quality of products and services, they also valued the problem-solving efficiency and quality of Internet platforms.

As an organizational model, the community includes many business models. Common community business models include:

Realization of community advertising: Realizing through advertising essentially regards the community as an advertising channel.

Realization of community e-commerce: The advantage of community e-commerce lies in the high precision and interaction of community members, facilitating the accurate docking and targeting of community members.

Realization of paid members: To enjoy the services in the community and participate in community activities, community members are required to pay a threshold fee before joining the community.

### (3) Internet+industrial chain O2O in Web 3.0

The universal interconnection refers to the “ interconnection of things+mobile interconnection+high-speed interconnection ” . At this stage, intelligentization was the most significant characteristic while the integration of traditional industries and Internet was common. The Internet has become a tool for resource optimization and integration, and integrated the information, technology and platforms to reshape traditional industries in the social economy and play its huge role in the allocation of social resources. Internet innovation has played a huge role in the economic and social fields. Moreover, to realize the goal of improving social productivity and innovation, the Internet-based infrastructure and tools have been used more extensively in some fields, thus creating a new economic development pattern.

With the beginning of the Internet+industry, the virtualization process has spread from individuals to enterprises, while companies have become Internet participants. Due to obstacles in industrial experience, channels, networks, and product identification, giants in traditional consumer industry can only enter the industrial Internet through mergers, acquisitions, cooperation, and independent development. The traffic-oriented business model of Web 1.0 and Web 2.0 was not applicable during this stage and replaced by a business model in the form of Internet+industrial chain O2O.

The comprehensive penetration of the industrial Internet had significant impacts on the fields of production, sales and distribution, financing and logistics supply. The new business model of the Internet+finance+industry was based on consumption, while the Internet rapidly penetrated into all aspects of people ’ s lives and greatly affected people ’ s living habits and consumption behaviors. The industrial chain of the Internet extended to both online and offline channels, which catalyzed more new models based on the Internet industry.

The business model of Internet+industrial chain O2O expanded the demand and the market supply space established by both parties and improved the efficiency of the operating processes in logistics, information flow, business flow and capital flow in the traditional industrial chain.

Based on the powerful information functions of the Internet, the traditional offline scale economy has evolved into a multi-service and multi-variety economy. As the consumer Internet became digital and networked, while the shelf and inventory costs were almost zero, Internet enterprises have become leaders in the competition between traditional companies. Therefore, traditional businesses were severely affected in the retail, entertainment, and tourism industries, and Internet enterprises became leaders in these fields.

#### (4) Internet+cross-industry ecological network in Web 4.0

If Web 3.0 is a large-scale interconnected network, Web 4.0 will break all the regional boundaries. At this stage, companies not only extended the industrial chain but integrated with traditional enterprises and made more effective use of resources in the Internet ecosystem. More participation roles with different identities have become the nodes that provided, distributed and integrated resources, and created value jointly.

The three enterprises, including Baidu, Alibaba, and Tencent, have divided their respective spheres of influence during the business model of the Internet+cross-industry ecological network. Their comprehensive strength has basically reached the ceiling. In order to further enrich the businesses, BAT has established their own ecosystems. The mutual penetration and integration of the three to jointly create value have become increasingly apparent.

Baidu made large investments or acquisitions around mobile, O2O and LBS living services as well as middle page strategies, such as Financial Cloud, Medical Cloud, Unmanned Vehicles, Baidu Medical and Baidu Verne Institute.

The e-commerce industrial chain was an advantageous area of Alibaba. However, in ecological construction, Alibaba turned to more basic fields and performs extensive cross-border integration. It established comprehensive strategic cooperation with Suning and invested RMB300 billion to establish the Cainiao logistics network and cooperate with major logistics companies. In addition, it invested HKD2.8 billion in RRS Logistics of Haier Group. Besides, it aggressively expanded into the cultural, film and entertainment industry by establishing the Alibaba Music and Alibaba Pictures, as well as the American sports product e-commerce brands, such as Fanatics.

The acquisition pace of Baidu in the Internet market has driven Alibaba forward. Tencent has also been involved in a number of fields, including wealth management, living services,

mobile payments, e-commerce, games, and maps to seize market opportunities and establish a new Internet ecosystem.

In the “ Internet+cross-industry ecological network ” business model, the Internet promotes the transformation from technological innovation to commercial applications by virtue of modern information technologies, constructs the technological path and business model innovation for the transformation and development of traditional industries, and builds the new integrated commercial ecological network.

#### (5) Mobile Internet+sharing economy in Web 5.0

With the giant progress of mobile Internet, third-party payment, massive data, and cloud computing, excess resources, global economic downturn, and Internet+sharing economy have become new highlights in economic development and constituted a new development model for China’ s Internet business model innovation.

From a global perspective, the sharing economy was developing rapidly. In general, the number of platform enterprises kept rising, the fields involving sharing economy kept expanding, and the market size grew rapidly. Since the 2008 financial crisis, this new economic model of “ seeking to use instead of owning ” has expanded from the United States to the countries in Europe, Asia Pacific, and Africa. In 2015, the transaction volume of the global sharing economy market was approximately RMB 81 billion. Global companies with a market value of over RMB 10 billion have appeared in the travel and accommodation fields. For example, the founder of the travel industry, Uber, has covered more than 60 countries and has a market value of more than RMB 50 billion. The penetration rate of the sharing economy was astonishing, from the initial accommodation and travel to medical, education, catering, logistics, finance, infrastructure and other aspects. In addition, it has accelerated its expansion into more fields, such as agriculture, energy, production and urban construction. According to the data released by CB Insights, the economic sharing enterprises often accounted for more than a third of the unicorn companies that have appeared in recent years.

In China, the sharing economy has grown rapidly. As of February 2017, there were a total of 186 international unicorn companies, of which 22.6%, namely 42 companies, were Chinese companies. Specifically, 15 of them were companies with the characteristics of sharing economy,

which accounted for 35.7% of Chinese unicorn companies. From the perspective of market size, public environment, and venture capital, the sharing economy has entered its golden stage in China.

(1) Connotation of sharing economy business model

The connotation of sharing economy is de-intermediation and re-intermediation in terms of business model. Participating subjects involve suppliers, demanders, and shared economic platforms. From the types of suppliers and demanders, the sharing economy can be divided into four basic models: C2C, C2B, B2B, and B2C.

C2C is the most typical and common business model. Many originating companies of the sharing economy, such as Uber and Airbnb, chose this model when they were founded. Individuals are both suppliers and demanders, while platforms provide venues and media for transactions. Its main characteristic is that the supply platform directly contacts the suppliers and demanders, and is only used to match the supply-demand information. Transactions between suppliers and demanders are no longer affiliated with traditional business organizations. This is the so-called “ de-intermediation ” , and the sharing economy platforms become the “ new intermediary ” between suppliers and demanders. The platforms have no fixed costs based on products and services. Their costs come from related expenses, such as platform maintenance, which categorizes them into asset-light operations. The economic sharing platforms based on transaction commissioning satisfy the demand-side characteristics and customized services, reduce their fixed costs, improve the transaction success rate, and increase the utilization efficiency of the idle resources of suppliers. According to statistics from the Tencent Research Institute, more than 80% of the 35 industries participating in the sharing economy in 2015 were driven by the C2C model. Therefore, individual participation is a key component of economic sharing.

In the C2B model, suppliers are individuals while demanders are enterprises. The core functions are basically the same as those of C2C. Specifically, suppliers and demanders are connected on the platforms, which match supply-demand information. The difference from C2C is that the demanders are enterprises and the sharing platforms are more specialized. Some scholars believed that the C2B model may be one of the main development trends of the sharing economy in the future and will be increasingly important in the economy, becoming a decisive

factor for the future business environment.

In the B2B model, the enterprises are assigned and allocated the resources, such as idle production equipment, through the sharing platform, which also means that the sharing economy enters the secondary industry from the tertiary industry and contributes to the innovation and upgrading of the real economy. The B2B model is considered as a new blue ocean for sharing economy. Enterprises share resources and quickly respond to market changes at a lower cost and in a more efficient manner. The typical representatives of B2B model include the supply chain sharing Floow2 and the workplace sharing WeWork. In addition, Uber and Airbnb launched enterprise products.

The B2C model can be divided into two types: ① enterprises are suppliers while individuals are demanders. The sharing economy platforms match supply-demand information, while enterprises provide individuals with the sharing services of idle resources; ② enterprises with idle physical resources are suppliers while individuals are demanders. Internet platforms no longer only match supply-demand information in society. Instead, as the contractor, they handle and allocate idle resources for suppliers and are directly responsible for connecting with demanders. They make profits from the price differences. In this case, platforms become suppliers and act as an intermediary enterprise. B2C is a special model in the sharing economy. There is still controversy as to whether the B2C model should be included in the sharing economy. However, it cannot be ignored that more and more enterprises in the sharing economy have shifted from C2C to B2C, or adopted B2C in essence.

## (2) Development mode of China's sharing economy

Sharing of the sharing economy has developed from idle resources to professional resources. Some professionals called it the pan-sharing economy. Instead of focusing on the idle status of individual resources, it is inspired by the concept of sharing economy, discovering the value and space of the surplus economy from a broader economic perspective, and turning them into a new pattern.

Under the new connotation of sharing economy, the general trend is that the C-side of supply and demand turns to the B-side, and the development potential of B2C and B2B is huge. Due to individual trust, traffic growth and service standardization problems, many sharing

economic startups shift from the C2C model to B2C model, and get more deeply involved the transaction, or open more B-side institutions on the supply side. For example, Didi expanded from the initial access of private cars to the establishment of self-operated car system in order to improve operational efficiency through standardized product and management. As a result, the platform and drivers are more closely related while more diverse data is collected. Apart from those platforms which transform to B2C, some platforms have been positioned at B2C from the beginning. For example, most of the bicycle sharing platforms, which suddenly rose in 2016, operated on a typical heavy-asset B2C model. The concept of “time-sharing lease” corresponds to the sharing economy, and the B-side independently develops and produces standardized products. There are also light-asset B2C based platforms.

The offline team of the short-term leasing platform, Tujia, collected the housing resources, uniformly renovated them, and provided standardized services in the offline user experience process. Apart from the platform-based enterprises, some traditional enterprises in the sharing economy have adopted the B2C model of “replacing selling by leasing” to update their corporate strategic directions. They have replaced the traditional user-oriented sales with leasing services.

While the B2C model keeps prospering, the B2B model has also emerged in China and realized the sharing transition from consumption to production. For example, Sany Heavy Industry Co., Ltd. cooperated to establish a cloud platform for industrial sharing; China Southern Airlines, AVIC, China Eastern Airlines, and Air China jointly established the air material sharing platform; EasyScience realized the sharing of research equipment required by universities and enterprises. Sharing between enterprises involves not only tangible idle assets but intangible production capacity, thus providing the companies with better assistance and achieving win-win cooperation between multiple parties.

### (3) Status of China's Internet+sharing economy

Market size:

As of 2016, the transaction volume of China's sharing economy market was RMB 3452 billion, increasing by 103% compared with that in 2015; in 2016, its financing scale was approximately RMB 171 billion, marking a year-on-year increase of 130%; the number of



participants in sharing economic activities was more than 600 million, increasing by about 100 million compared to that in 2015; in addition, the number of service providers was 60 million, increasing by 10 million compared to that in 2015; the number of platform employees was about 5.85 million, increasing by 850,000 compared to that in 2015.

The sharing economy can unleash new development momentum by promoting the transformation and upgrading of the manufacturing industry. At present, China's sharing economy is still mainly concentrated in the tertiary industries.

In 2016, the sharing economy developed explosively in China, and a large number of Internet + new platforms emerged. The overall pattern changes can be summarized as follows:

First, the three hotspots are prominent. Bicycle sharing, live video streaming, and knowledge payment ushered in their explosive development era. In 2016, bicycle sharing developed at a high speed. Specifically, its market scale reached EUR159.9 million and its user population reached 28 million. In the second half of 2016, intensive capital poured into the bicycle sharing market, and the number of bicycle sharing brands exceeded 50. Likewise, in the live video streaming market which was favored by the capital market, as of the end of 2016, a total of 31 live video streaming companies across the country completed 36 financings, involving a total capital of EUR 141 million. With the rise of knowledge realization platforms, Fenda, Wenka, Zhihu Live, Ximalaya FM, and Haohao Shuohua have successively appeared in the paid knowledge service field.

Second, M&A appears in the pioneering fields. The competition pattern in the pioneering fields of transportation, accommodation, short-term rental, and living services has stabilized. M&A and strategic cooperation have emerged. Didi merged with Uber China and established a mutual holding relationship with Uber Global; the apartment and homestay business of Mayi Short-term Rental and Qunar; acquisition of Ctrip by Tujia, Dada and Jingdong Daojia were merged into Neo Dada.

The rapid growth of the Internet + sharing economy has injected new energy into the economic growth of China. Based on the cooperative and sharing concept, heavy asset industries, including real estate and automobile manufacturing, have vitalized or destocked through the batch signing or renting with the Internet + sharing economic platforms, which contributes to the transformation of economic momentum, turns the service industry into the main engine of

economic growth, and increases production efficiency and equipment utilization through production sharing.

#### **4.1.4.2 Overview of characteristics**

With the advent of Web 5.0, the emerging technologies, such as big data, cloud computing, and artificial intelligence, have catalyzed the intelligence-oriented business models, which have overturned the previous operating model and value creation path of the enterprises, and enriched the Internet enterprises with many new characteristics.

Characteristic one: Integrated industrial chain. The Industry 4.0 strategy of Germany proposed three integrations: vertical integration, horizontal integration, and end-to-end integration. Horizontal integration emphasizes the resource integration in the corporate value chain and information network; vertical integration refers to integration of internal information flow, capital flow and logistics, and the seamless integration of internal corporate information; end-to-end integration means the interconnection of all the terminals, including internal vertical integration and external horizontal integration, presenting integrated processes to customers and providing personalized services to promote value reconstruction in the industrial chain. End-to-end integration has blurred the boundaries between upstream and downstream enterprises and changed the core corporate assets into data, which has dramatically changed the organizational structure of enterprises.

Characteristic two: Open innovation platform. As the industrial chain is now advancing toward high integration, competition between industries is becoming increasingly fierce. The user identities and demands are different while traditional boundaries have changed. Besides, the corporate value creation has become more open and diverse. Therefore, a major characteristic of the current Internet business model is high openness, which is positive and cyclical in nature. In this process, companies use their core value capabilities to attract and contact stakeholders on platforms and create business value. Through this open strategy, enterprises can create a suitable ecological environment and promote the competitive advantages of their core ecosystem in the environment. For example, Facebook and Twitter followed the openness principle in establishing their platforms, as were Alibaba, Tencent, Baidu, 360 and Sina.

Characteristic three: Mass value creation. The Internet is not limited by time or space while consumers integrate into international platforms through the Internet. The decentralized

characteristic of the Internet allows users to produce their content, making them providers and creators of products and services. They can participate in the process of corporate value creation independently through the online community. In addition, crowdsourcing has emerged in the business model. Enterprises are mainly responsible for production, management, and maintenance, while users become producers and sellers. For example, Xiaomi developed multiple brand communities and used word of mouth marketing to promote the interaction between users and enterprises in order to maximize their common interests.

Characteristic four: Commercial data information. Enterprises transform platform data for product development services based on platform openness. For example, JD.com and Taobao built a transaction platform and launched many convenient services that have attracted consumers and merchants. Its complete credit system allowed consumers to transact on the platform, while the platform collected user data, tracked industrial analysis, and conducted the development of potential users and commodities.

Characteristic five: Conventional cross-industry integration. The big data accumulation of Internet platforms fully expands their resources. At present, the value of big data capabilities overflows on the Internet. The data sharing has promoted the corporate transformation behaviors and cross-border integration of Internet enterprises and transformed the inefficient links in traditional industries into high-value creation behaviors. Fresh Hema is an example that realized the perfect integration of technology and management through big data.

#### **4.1.5 Argument on business model innovation of China's Internet**

##### **4.1.5.1 Conflict between business model innovation and business ethics**

As an economic organization, a company has to pursue profits in order to survive, which is also a necessary prerequisite for corporate product development and production. The business model is the guiding plan for the realization of corporate value, which contributes to expanding corporate strength and gaining greater profits. Business model innovation can bring new vitality to the enterprises, but will also have an impact on traditional ethics when it is imperfect. This contradiction will affect the future development of enterprises.

The 2017 China E-Commerce User Experience and Complaint Monitoring Report published by the China International E-Commerce Center shows that among the e-commerce complaints in

2017, the proportion of retail complaints was 60.59% which was the highest; the proportion of living service complaints ranked second, accounting for 13.47%; the proportion of cross-border e-commerce complaints ranked third, accounting for 12.89%. See Tables 4-2 and 4-3.

It can be seen from the investigation that the feedback rate and feedback time efficiency of Suning, Pinduoduo, Vipshop, Jingdong, and iShansong are higher when dealing with user complaints, and they can actively deal with problems with users. The five platforms won the top five places in the 2017 National Comprehensive Retail E-Commerce Platform User Satisfaction List. As the complaint solution rate of Taobao/Tmall did not reach 50%, Taobao/Tmall has repeatedly entered the complaint handling blacklist, and thus ranked at the bottom of the satisfaction list.

In 2017 China Living Service E-Commerce-OTA, the complaints of Ctrip accounted for 8.16%, and its platform feedback rate and feedback efficiency ranked first in the industry; the complaint rate of Tuniu, Mafengwo, Tongcheng Tourism, and eLong was lower, ranking second to fourth in the 2017 B2C Living Service E-Commerce Platform-OTA User Satisfaction List; the complaints of Fliggy and Qunar were relatively higher, and they were rated as “ not recommended” .

It is shown clearly from these two groups of data that the complaint rate, platform feedback rate and feedback efficiency of the integrated retail e-commerce platforms affect the user experience and product satisfaction. E-commerce platforms should deal with the corresponding problems in time to optimize the user experience, actively respond to the complaints and further improve the commodity quality and service.

In 2012, the CEO of JD.com, Richard Liu stated on Weibo that the electronic product profits of JD.com would be zero in the next three years, triggering a price war between e-commerce enterprises. Facing the slogan of JD.com that “ our profit is zero and our prices are lower than those of Suning and Gome, Suning Tesco and Gome Electric responded and announced their participation in the price war. Subsequently, the National Development and Reform Commissions determined it as a deceitful behavior for consumers, and the three companies apologized to consumers, which marked the end of the incident. Therefore, ethical issues and value appeals of enterprises have always accompanied each other and influenced each other.

(1) Business ethical relationship in value proposition innovation

Value proposition refers to the problems the company must solve for customers. The company determines the target market and proposes a differentiated value proposition. A more unique value proposition can convey the value concept to customers more clearly, thus increasing customer satisfaction. The attractiveness of a product requires it to be innovative and different. Therefore, the decision-makers and designers should abandon inherent thinking and break the original laws and external representation forms of the product, which may involve business ethical issues. If ethical management is ignored, it will result in hidden dangers for the future of the enterprises.

Tencent has become a leader in the gaming industry through investment, agency, self-development and open platforms. After years of development, its innovative game model-“Localization” has attracted more users to access game products that can only be accessed in foreign markets. Originally, Tencent was the leader of social products and has now become the leader of game products. In the eyes of the public, the legendary success of Tencent cannot be separated from the development of game products. Likewise, Tencent agreed with this route and even gradually ignored business ethics. Due to the innovation of product business model, Tencent’s most successful game product, Arena of Valor, violated business ethics and damaged the rights and interests of stakeholders. Recently, it has been widely criticized by society. Internet enterprises are prone to public criticism upon a slight negligence.

From a business perspective, Arena of Valor has been very successful. It established a clear value proposition, targeted at market demand and accessed accurate users, thus generating good economic benefits. However, from a social perspective, Tencent ignored an important issue, namely the anti-addiction issue, which should have been a business management consideration for enterprises and product developers. Lack of ethical management has subjected Tencent to heavy criticism from the public, resulting in a bad social impact.

(2) Business ethical relationship in value creation innovation

The corporate value creation in the Internet era refers to reshaping the corporate organization through the technology and resources of the Internet, changing the corporate production methods and operating capabilities, thereby creating more value. Technology promotes business prosperity and increases the number and scale of corporate value activities.

However, while providing convenience, technology has subjected human beings to an awkward situation which refers to the ethical contradiction behind economic prosperity, specifically the security and trust issues.

New technologies have created massive added value for customers, but the high-frequency application of these technologies poses hidden dangers to information security. In the absence of authorization, information disclosure incidents were frequently in the Internet industry. The Report on the Protection of Chinese Internet Users' Rights released in 2016 shows that in 2016, the spam and personal information leakage troubled 688 million Internet users in China, and resulted in an economic loss of 11.89 billion euros. In addition, the counterfeit products in e-commerce have long been criticized by the public, which reflects the conflict between corporate value creation and business ethics.

### (3) Business ethical relationship in value transfer innovation

Value transfer refers to the resource exchange between users and enterprises, which mainly includes innovation in marketing methods and value networks. The Internet has accelerated the dissemination of data information. However, facing such large scale and quantity of information, enterprises need to innovate their marketing models and provide users with accurate products and services. Companies that renounce social ethics will inevitably meet with a reduction in the number of users and poor social reputation.

### (4) Business ethical relationship in value realization innovation

Profit is the cornerstone of the survival, operation, and development of an enterprise. Value realization reflects the overall business investment and income behaviors of an enterprise. Its innovation mainly covers two aspects: the innovation of financial model and profit model. The financial model refers to the cost composition and capital operation of the company while the profit model is the income source and method of the company. Enterprises must develop diversified income sources and innovative income methods in order to better realize their value. In particular, innovative profit models keep emerging as a result of technological progress. In the early stage, enterprises prioritized profits out of the profit-seeking instinct and tended to ignore ethics and morals. However, with the advancement of corporate development, the priority of strategy and benefit over ethics still exists. Due to the lack of ethical and moral management mechanism, product innovation and profit models directly results in serious economic losses and

increasingly significant contradictions between business model innovation and business ethics.

An example is the QvodPlayer incident. QvodPlayer became the leading player in China's player market quickly as it can open the third-party links quickly. It also became an important channel for piracy and dissemination of obscene videos. The revenue of QvodPlayer in 2011 exceeded 1.3 million Euros. Although QvodPlayer's business model innovation based on resource collection technology made huge profits in a short time, it violated business ethics. In 2016, QvodPlayer was investigated and prosecuted by the judicial agencies for allegedly distributing obscene videos. The product innovation and profit model that once brought the maximum benefit to the enterprise affected the common interests of stakeholders and ultimately hurt the development of the enterprise because it violated business ethics.

At the initial development stage of search engines, Google and Baidu both had their basic value judgment indicators for the content of Internet products and adopted the quality of links as the judging criteria. However, Baidu chose to pursue profits and ignored the content quality. Its innovative product profit model is exactly the P4P which the public is familiar with. This innovation has brought huge economic benefits to Baidu. This model accounted for 99% of Baidu's revenue. With the increase in the number of users, the disadvantages of ignoring business ethics became apparent, which caused public criticism and triggered stock market fluctuations. As a result, Baidu lost nearly 160 million euros, which is also the inevitable consequence of Baidu as it ignored business ethics in business model innovation.

#### **4.1.5.2 Conflict between openness and stakeholder management**

An open value network contributes to the construction of business ecosystem and promotes the increase in the number and size of stakeholders. Stakeholders have different needs and claims, while conflicts between enterprises and stakeholders may arise from time to time. In order to achieve long-term corporate development, it is necessary to maintain the relationship between stakeholders.

However, some enterprises often ignore the stakeholder management. In an open environment, with the rapid expansion of business systems and user scale, enterprises ignore the rights and interests of stakeholders, which will result in many negative effects. The lack of management is reflected in ambiguous definitions of stakeholders, unscientific division of

stakeholders, and ambiguity of stakeholder importance. For example, Tencent's division of stakeholders was relatively rough. Its corporate responsibility report only listed the classification of stakeholders, including employees, shareholders, users, partners, non-profit organizations, the natural environment, and vulnerable groups, lacking scientificity and details. Besides, the unclear stakeholders' rights prevented them from being specific and comprehensive in communication. The 3Q War between Tencent and its competitor (the fierce competition between Qihoo 360 and Tencent) and the Disgusting Tencent (an article critical of Tencent) between Tencent and its partners fully revealed the significant loopholes in the stakeholder management of Tencent.

Efficient and reasonable handling of conflicts of interest is the key to promoting the sustainable development of companies. Especially in the highly integrated industrial chain, stakeholder management has become more prominent when the number of stakeholders has increased.

## **4.2 Theoretical system and research model**

### **4.2.1 Theoretical structure**

Stark (2011) believed that customers are expecting more of innovation and quality. Silvia B. and CarlMW. (2015) considered that as innovation enhances customer experience and meets customer needs, it plays a crucial role in enhancing the competitiveness of enterprises. Enterprise performance is an important criterion measuring the success of business model innovation.

The criteria measuring enterprise success include economic performance and social performance, which show an interdependent relationship.

Economic performance refers to the profitability and strategic development of enterprises while social performance refers to the performance of enterprises in social affairs and their concern and response to stakeholders. The social performance involved in this study is based on customer satisfaction, which refers to combine customer satisfaction and economic performance into enterprise performance.

Amit and Zott (2001) argued that business model is a system for interaction and interdependence between an enterprise and its customers, partners and suppliers.

With Tankhiwale S (2009) proposed that enterprises and stakeholders can form



institutionalized or non-institutionalized criteria, code of conduct and guidelines for dealing with such relationships through different forms of cooperation, which means that enterprise ethics and relationship quality of stakeholders can correctly evaluate such relationships.

In summary, this study proposes “business model innovation – enterprise performance structural model” to evaluate Internet innovation. In the model, enterprise performance includes customer satisfaction and economic performance; enterprise ethics affect business model innovation and relationship quality of stakeholders as shown in Figure 4-1.

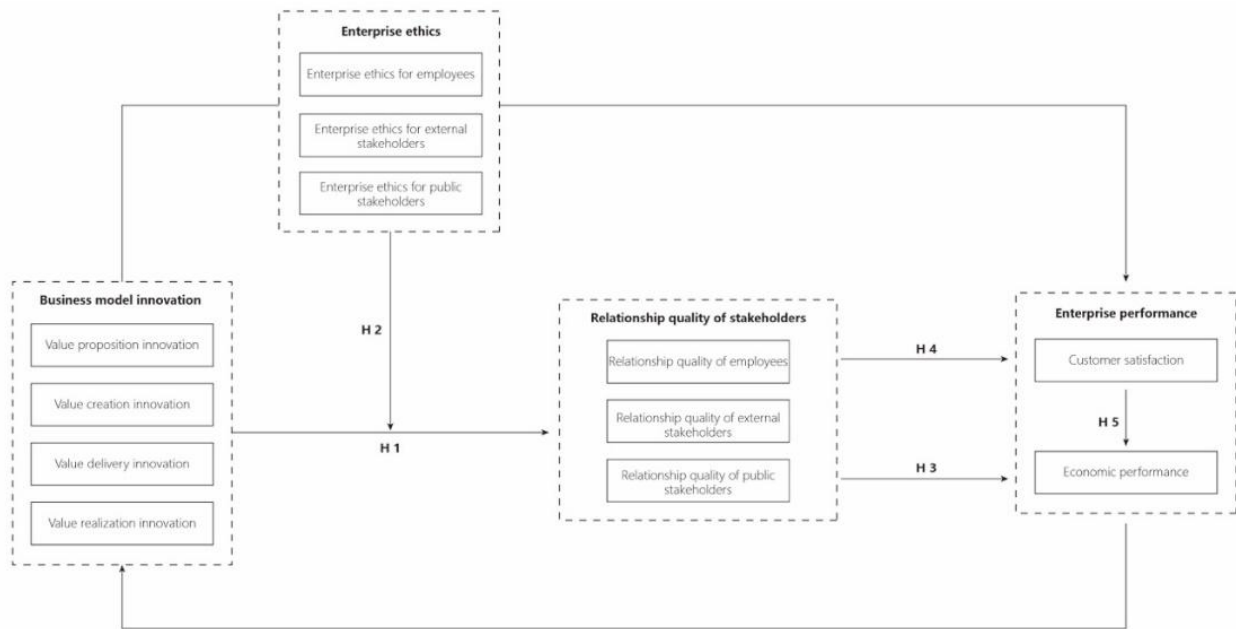


Figure 4- 1 Basic theoretical framework

#### 4.2.1.1 Influence of relationship quality of stakeholders on business model innovation

Business model innovation is a balanced game between enterprises and stakeholders, which affect each other. Business model innovation supported by stakeholders can succeed, and or fail otherwise, which leads to another new cycle of innovation. Osterwalder (2004) pointed out that the business model reflects an interest exchange relationship between enterprises and stakeholders. This interest exchange model forms business model innovation. Therefore, business model innovation will have a positive or negative impact on stakeholders. Therefore, following hypothesis is proposed:

H1: The relationship quality of stakeholders has a positive influence on the form of business model innovation.

Guo (2010) presented that business model innovation of different dimensions will actively enhance the competitive advantage of enterprises .

Based on the business model structural theory of Yuan (2007), business model innovation includes value proposition innovation, value network innovation, value transfer innovation and value realization innovation, which are set as the indicators for verifying that business model innovation affects stakeholders and then enterprise performance (customer satisfaction and economic performance).

Based on the above research theories, the three dimensions of stakeholders of Internet platform enterprises, including employees, external stakeholders and public stakeholders, are set as the indicators for verifying that business model innovation (value proposition innovation, value network innovation, value maintenance innovation and value realization innovation) affects stakeholders and then enterprise performance (customer satisfaction and economic performance).

Based on the above analysis, the following hypotheses are proposed:

H1a: There is a significantly positive correlation between business model innovation and relationship quality stakeholders, employees;

H1b: There is a significantly positive correlation between business model innovation and relationship quality stakeholders, external stakeholders;

H1c: There is a significantly positive correlation between business model innovation and relationship quality stakeholders, public stakeholders.

#### **4.2.1.2 Hypotheses for enterprise ethics**

The principle of benefit sharing between enterprises and stakeholders requires that business model innovation must be stably supported by stakeholders, which refers to obtain their loyalty and build a win-win cooperation relationship. Or otherwise, business model innovation will not succeed.

As the business behaviors of enterprises will have a positive or negative impact on stakeholders, they must be regulated by certain specifications. According to the enterprise ethics theory, “ ethics is the norm on the relationship between enterprises and internal &

external stakeholders, and can promote mutual coordination and cooperation. The cooperation between enterprises and stakeholders is influenced by the ethical level in business model innovation.

Based on above analysis, the following hypothesis is proposed:

**H2:** Enterprise ethics is a factor regulating the influence of business model innovation on the relationship quality of stakeholders. (positive)

#### **4.2.1.3 Influence of relationship quality of stakeholders on enterprise performance growth**

##### **4.2.1.3.1 Influence of relationship quality of stakeholders on customer satisfaction evaluation**

Oliver & Linda (1981) believed that customer satisfaction is “a mental state. Philip Kotter (1994) defined customer satisfaction as the feeling of pleasure or disappointment raised by the difference between the perceived effect (or outcome) of an individual toward product and his/her expectations. The perceived reaction of customers results from external influences. Yi & Gong (2009) proposed that enterprises are a social exchange relationship that affects customer satisfaction.

Researchers believed that customer satisfaction can rise or fall due to the relationship quality of stakeholders. Heskett (1994) presented that the status of employees will change the user experience, such as product and service value, and the user experience response to service value will affect user satisfaction.

Zhang (2016) believed that good supplier relationship can greatly enhance the competitiveness of enterprises and further promote the customer satisfaction.

Yu (2009) pointed out that customer recognition will form the brand benefits of enterprises, thereby reducing trading costs and promoting customer satisfaction.

To sum up the above theories, the following hypotheses are proposed:

**H3a** The relationship quality of stakeholders, employees, has a positive influence on customer satisfaction

**H3b** The relationship quality of stakeholders, external stakeholders, has a positive influence on customer satisfaction

**H3c** The relationship quality of stakeholders, public stakeholders, has a positive influence

on customer satisfaction

#### **4.2.1.3.2 Influence of relationship quality of stakeholders on economic performance**

Researchers explored the relationship between stakeholders and enterprise performance. Under the guidance of stakeholder theory, the ultimate goal of enterprises is undoubtedly their sustainable development, while the ultimate goal of stakeholders is the economic performance of enterprises.

Davis and Blomstrom (1966) argued that enterprises and stakeholder relationships are equally important elements of social responsibility

Zhang (2009) concluded that meeting the stakeholder requirements, coordinating their relationships, obtaining their trust and support is the social responsibility that enterprises must undertake, which must also consider the dialectical relationship between stakeholders and enterprise performance. Luk (2005) argued that the economic performance of enterprises is affected by users, competitors and employees.

Li (2005) pointed out that enterprises should coordinate with partners, employees, customers and other stakeholders to avoid the negative impact of conflicts and disputes on profitability and economic performance of enterprises.

To sum up the above theories, the following hypotheses are proposed:

**H4a** The relationship quality of stakeholders, employees, has a positive influence on economic performance

**H4b** The relationship quality of stakeholders, external stakeholders, has a positive influence on economic performance

**H4c** The relationship quality of stakeholders, public stakeholders, has a positive influence on economic performance.

#### **4.2.1.4 Influence of customer satisfaction on economic performance**

Peter F. Drucker (1954) believed that the essence of enterprises, which refers to the most important principle that determines the nature of enterprises, is economic performance. To make enterprise operations and employees productive, management organizations should focus on social impacts and social responsibilities. In addition, management organizations should pay attention to the evaluation of the enterprise goals by external customers. Therefore, users are the

core stakeholders in the realization of economic performance.

Since the 1990s, researchers have studied the relationship between customer satisfaction and economic performance. Researches have shown that financial performance indicators (market share, operating income, stock price and net profit margin) are positively affected by customer satisfaction.

Lanbert and Richard AL (1998) argued that the rise and fall of customer satisfaction will have a positive or negative impact on the development of economic performance.

Anderson (2000) proposed that improving customer satisfaction can increase the profitability of enterprises, result in positive reputation spread, enhance the image of enterprises, and reduce the customer maintenance costs.

Heskett J.L (1997) concluded through statistics that customers with higher satisfaction have higher reorganization rates and customer loyalty. If loyalty increases by 5%, the enterprise profit will increase by 25-85%.

As a result, the growth of enterprise profitability and performance capability are closely related to customer loyalty and satisfaction. In summary, following hypotheses are proposed:

**H5a:** Customer satisfaction has a positive influence on the profitability of economic performance.

**H5b:** Customer satisfaction has a positive influence on the market share of economic performance.

**H5c:** Customer satisfaction has a positive influence on the growth of active users

#### **4.2.2 Construction of research model and design of measurement**

In order to improve the reliability and validity of research results, the questionnaire design principles are as follows: (1) Make reasonable improvements on the verified research scale. (2) Learn from professionals, hold discussions, collect opinions on questionnaire scales and measurement items to organize, modify, and improve them. (3) Perform predictive testing on small-scale questionnaires in order to test the appropriateness of the item setting before large-scale distribution of questionnaires, modify and delete the items based on the results to form the final questionnaire (see Appendix3).

#### 4.2.2.1 Design of variables and organization of measurement

Hereunder, we evaluated the items in reference to the Likert seven-level scale to increase the data variability, where “1” means “disagree”, “7” means “agree”, and “3” means “general”. According to the above research, the variables mainly included business model innovation, enterprise ethics, relationship quality of stakeholders, customer satisfaction, and economic performance.

##### **Design of measurement on business model innovation:**

According to the above research, this study set value proposition innovation, value network innovation, value maintenance innovation and value realization innovation as the variables of business model innovation. Under the guidance of the connotation and dimensional structure of business model innovation proposed by Shafer SM (2005), and with reference to the Business Model Innovation Questionnaire designed by Guo Haihe Shen Rui (2012), Zott C. & Amit R. (2007) and Liu (2014), the research evaluation was performed based on the research needs for business model innovation as shown in Table 4-1.

Table 4- 1 Dimensional indicators of business model innovation

Dimension	Measurement indicator	Source
Value proposition innovation	Accuracy of market positioning	Shafer et al (2005)
		Liu (2014)
	Novelty	Guo and Shen (2012)
		Feng (2015)
Value network innovation	Customer perception	Feng (2015)
		Li (2016)
	Business process efficiency	Zott and Amit (2007)
	Differentiation and diversity of products and services	Guo and Shen (2012)
		Liu (2014)
	Holding volume of effective	Long (2010)

	information	Li (2016)
	Marketing channel diversity	Liu (2014)
	Cooperation compactness	Feng (2013)
Value maintenance innovation	Partner diversity	Zott and Amit (2007)
		Guo and Shen (2012)
	Uniqueness	Zott and Amit (2007)
Value realization innovation	Income source diversity	Liu (2014)
	Cost structural optimization	Zott and Amit (2007)
		Liu (2014)
	Capital operation activities	Liu (2014)

**Design of measurement on enterprise ethics:**

In essence, the social responsibility of enterprises is ethical, which is a new understanding of the relationship between enterprises and social ethics. Therefore, the two and their evaluation scope are highly similar. The measurement indicators on enterprise ethics in this study were set from the perspective of stakeholders.

This study is targeted at Chinese Internet enterprises. In order to approach the real-world scenarios, it is based on the measurement indicators proposed by researchers, such as Enterprise Ethics Evaluation System of Xia (2011), Enterprise Social Responsibility Behavior Scale of Zheng (2007), and Enterprise Ethics and Ethical Quality Model of Ouyang (2003). According to the research needs, the ethical evaluation indicators of Chinese Internet platform enterprises were designed. The specific contents are shown in Table 4-2.

Table 4-2 Ethical evaluation indicators of Chinese Internet platform enterprises

Dimension	Measurement indicator	Source
	Salaries and benefits	Zheng (2007)

Enterprise ethics for employees	Rationality of working hours	Xia (2011)
	Occupational development planning	Ouyang (2003)
	Fairness of employment and promotion opportunities	Xia (2011)
	Price rationality, quality, safety and reliability of provided products and services	Xia (2011)
Enterprise ethics for external stakeholders	Completeness, authenticity and reliability of provided information	Xia (2011)
	Protection of user privacy	Xia (2011)
	Competition fairness	Xia (2011)
	Cooperation support	Ouyang (2003)
	Protection of intellectual property rights	Ouyang (2003)
Enterprise ethics for public stakeholders	Legal compliance	Zheng (2007)
	Participation in nonprofit cause	Zheng (2007)
	Formulation and implementation of environmental protection planning	Xia (2011)
	Fulfillment of responsibilities	Xia (2011)

**Measurement of relationship quality of stakeholders:**

According to the above research, trust, commitment, communication, dependence and governance participation were set as the five dimensions of relationship quality of stakeholders. The stakeholder responses were evaluated from the perspective of enterprises.

(1) Design of measurement on relationship quality of stakeholders-employees

According to the above research, four dimensions of relationship quality of employees were



selected, including satisfaction, trust, commitment, and governance participation, which draws from the evaluation results of Wei (2003); Lin (2010); Guan (2011); Xiao (2004) as shown in Appendix 22.

(2) Design of measurement on relationship quality of stakeholders-external stakeholders

According to the above research, trust, commitment, communication, dependence and governance participation were set as the five dimensions of relationship quality of external stakeholders. The stakeholder responses were evaluated from the perspective of enterprises, which draws from the measurement scales of Diney & Cannon (1997) , Mo (2005) ; and the evaluation results of Anderson and Witz (1992) ; Mohr and Spekman (1994) ; Caniels (2007). The specific contents are shown in Appendix 23

(3) Design of measurement on relationship quality of stakeholders-public stakeholders

According to the above research, trust, commitment, communication, dependence and governance participation were set as the five dimensions of public stakeholders. The stakeholder responses were evaluated from the perspective of enterprises. Public stakeholders include government, media, community and environment. The research results of Doney , Cannon (1997) and Yu (2009) , Beijing WTO Affairs Research and Consulting Center, and the index system proposed by Xiao (2004) were improved according to the research needs, and the Measurement Scale on the Relationship Quality of Stakeholders-Public Stakeholders was proposed as shown in Table 4-3.

Table 4- 3 Measurement scale on the relationship quality of stakeholders-public stakeholders

Dimension	Measurement indicator	Source
Trust	The public considers that the enterprises possess great development prospects	Doney and Cannon (1997)
	The public believes that the enterprises can operate legally	Yu (2009)
Communication	The enterprises have special departments to communicate with the public	Beijing WTO Affairs Research and Consulting Center
	The enterprises publish timely and authentic information to the public	

Dependence	The enterprises are very sensitive to and concerned about the public policies of the government and the environmental evaluation of the community	Beijing WTO Affairs Research and Consulting Center
	The enterprises have convenient access to governmental and community resources	
Governance participation	The enterprises value the suggestions or opinions from the public	Xiao Yuantao (2004)
	The enterprises can participate in the decision-making of the other party	

**Measurement of enterprise performance:**

H5a: Customer satisfaction has a positive influence on the profitability of economic performance.

H5b: Customer satisfaction has a positive influence on the market share of economic performance.

H5c: Customer satisfaction has a positive influence on the growth of active users.

(1) Measurement of customer satisfaction

Customer satisfaction is determined by comparing the actual perceived effect of the product with the expectations of the buyers.

According to the review on the above research theories, the subject of this study is Chinese Internet enterprises. In order to approach the real-world scenarios, six dimensions were set based on Chinese C-CSI model measurement indicators, including enterprise image, perceived service quality, perceived product quality, comprehensive satisfaction, customer complaints and customer loyalty. Based on the review of research results, Questionnaire A (Appendix 1) was designed based on the principles of customer priority, thoroughness, typicality, and operability, including 34 measurement items and one open item. Through pre-test, valuation, selection, and review, Questionnaire B: Customer Satisfaction Measurement Scale of Internet Platform Enterprises (Appendix 2) was formed as shown in Table 4-4.

Table 4- 4 Questionnaire B: customer satisfaction measurement scale of internet platform enterprises

Dimension	Measurement indicator
-----------	-----------------------

Enterprise image	Brand image
	Enterprise reputation
	Public service awareness
Perceived service quality	Focus on customers
	Employee (Customer service) attitude
	Response timeliness to customer feedback
	Customer individualization
	Overall satisfaction of perceived service quality
Perceived product quality	Consistency with expectations
	Demand satisfaction
	Product reliability
	Product attractiveness
	Overall satisfaction of perceived product quality
Customer complaint	Customer complaints
Customer loyalty	Willingness to repeat use/purchase
	Willingness to recommend for use/purchase

(2) Measurement of economic performance

Economic performance is divided into financial performance and market performance. The performance measurement of enterprises should be closely related to their strategies. Robert S. Kaplan (1992) proposed the balanced scorecard approach and argued that enterprises should examine their performance from four perspectives, including customer, business process, learning and growth, finance in order to manage their performance. According to the research needs, this study investigated the relationship between customer satisfaction and economic performance of

Internet platform enterprises, and set three factors to evaluate the economic performance of enterprises, including income level, market share, and active users, as shown in Table 4-5.

Table 4- 5 Design of economic performance measurement scale of internet platform enterprises

Dimension	Measurement indicator
Income level	Total operating income
	Net profit
Market share	Overall market share
	Target market share
Active user population	Monthly active user population
	User growth rate

#### 4.2.2.2 Collection of research samples

##### (1) Determination of research samples

This study explored three Chinese Internet enterprises, including Baidu, Alibaba and Tencent. The motivations for sample selection include: The first is that they are highly recognized. Baidu, Alibaba and Tencent are Chinese top Internet enterprises with high public awareness. The second is that they are representative. The purpose of this study is to explore the inevitable connection between business model innovation and performance development of Chinese Internet enterprises, involving stakeholders, enterprise ethics and customer satisfaction. Therefore, it is necessary to select representative enterprise samples. The third is that their data is available. For the related issues, massive enterprise information is required. As listed enterprises have the obligation of information disclosure, their data is highly available.

##### (2) Questionnaire distribution and recovery

In order to prevent the evasion of sensitive information from affecting the questionnaire authenticity, this study conducted a questionnaire survey on the target enterprise personnel and relevant industrial practitioners to ensure data availability through comparative analysis. The questionnaires were distributed in the following methods: 1) questionnaires were distributed

through social acquaintances of friends and relatives, and on Internet; 2) task group commissioned enterprise staff to distribute the questionnaires; 3) customer satisfaction was measured by online electronic questionnaires.

In this formal survey, 500 questionnaires were recovered, and 31 invalid questionnaires were excluded. Finally, 469 valid questionnaires were obtained. The validity of the questionnaire survey reached 93.8%, including 241 Questionnaire B units and 228 Questionnaire C units.

## **4.3 Data statistics and analysis**

### **4.3.1 Descriptive statistical analysis**

This study targeted Chinese Internet platform enterprises, including Baidu, Alibaba, and Tencent, and conducted a questionnaire survey on the target enterprise personnel and relevant industrial practitioners. The characteristics, behaviors, and distribution of the two sample groups were statistically analyzed to determine the representativeness of the samples.

#### **4.3.1.1 Analysis of basic characteristics of relevant industrial practitioners**

According to statistics, the ratio of males to females is 48.6%:51.3%, which is approximately 1:1. In terms of age distribution, the proportion of surveyed industrial practitioners aged 16-35 is 75.8%, which indicates that most of the industrial practitioners are young; academic in terms of education background, the proportion of undergraduates is 73.2% while the proportion of masters is 13.5%; in terms of working experience, the proportion of industrial practitioners with 1-10 years' working experience is 81.5%. Refer to Appendix 16.

#### **4.3.1.2 Analysis of basic characteristics of surveyed customers**

According to statistics, the ratio of males to females is 46.1%:53.9%, which is approximately 1:1. In terms of age distribution, the proportion of surveyed customers aged 16-25 is 58.9%, which indicates that most of the customers are young and pursue online user experience. The proportion of surveyed customers with 7 years' experience or longer is 59.7%, which is in line with the actual situation. Therefore, the sample data is highly credible. Refer to Appendix 17.

### 4.3.2 Data reliability and validity analysis

#### 4.3.2.1 Reliability analysis

At present, Cronbach's  $\alpha$  is mainly used to test the scale reliability. When Cronbach's  $\alpha$  is higher than 0.9, the scale reliability is very satisfactory. When Cronbach's  $\alpha$  is between 0.7 and 0.9, the scale reliability is good. When Cronbach's  $\alpha$  is between 0.6 and 0.7, the scale reliability is acceptable. When the reliability coefficient of the scale is below 0.6, the scale reliability is poor. The reliability analysis results of this study are shown in Table 4-6.

Table 4-6 Reliability analysis results

Detection variables	Questions	Cronbach's Alpha Cronbach's $\alpha$	Overall Cronbach's $\alpha$
Business model innovation	13	0.865	0.966
Enterprise ethics	16	0.913	
Relationship quality of stakeholders	18	0.952	
Customer satisfaction	16	0.868	
Economic performance	3	0.815	

The Cronbach's  $\alpha$  of each measured variable in the formal scale was between 0.815 and 0.952, and the overall Cronbach's  $\alpha$  reached 0.966, which indicates that the formal scale was internally consistent. Therefore, the reliability of the measurement scale in this study meets the empirical requirements, which provides a strong guarantee for the validity of the subsequent research results.

#### 4.3.2.2 Validity analysis

Exploratory factor analysis is one of the important methods to test the structural validity of the scale. This study adopted this method to test the scale validity. The specific process is as follows:

##### (1) Validity analysis of business model innovation

Exploratory factor analysis was performed on the business model innovation scale. First, the KMO test and Bartlett spherical test were conducted to determine whether the exploratory factor analysis is suitable for data. It was found that the KMO of the sample was 0.860, and the chi-

square of the Bartlett spherical test was 1341.253, the degree of freedom was 78, and the significance was 0.000, which shows the exploratory factor analysis is suitable for the data in the business model innovation scale. See Appendix 18-a.

Then, exploratory factor analysis was conducted on the business model innovation scale through SPSS24.0, and the common factors with eigenvalue higher than 1 were extracted by the maximum variance rotation. The results are shown in the following table. The four common factors extracted were the same as the original questionnaire design. In addition, the commonality of all the questions was above 0.4, the load coefficient was above 0.5, and the total cumulative explained variation of the common factor was 68.327%, which reflected most of the information of the original variables, and proved the validity of the scale. See Appendix 18-b.

### (2) Validity analysis of enterprise ethics

Exploratory factor analysis was performed on the enterprise ethics scale. First, the KMO test and Bartlett spherical test were conducted to determine whether the exploratory factor analysis is suitable for data. It was found that the KMO of the sample was 0.918, and the chi-square of the Bartlett spherical test was 3096.275, the degree of freedom was 120, and the significance was 0.000, which shows the exploratory factor analysis is suitable for the data in the enterprise ethics scale. See Appendix 18-c.

Then, exploratory factor analysis was conducted on the enterprise ethics scale through SPSS24.0, and the common factors with eigenvalue higher than 1 were extracted by the maximum variance rotation. The results are shown in the following table. The three common factors extracted were the same as the original questionnaire design. In addition, the commonality of all the questions was above 0.4, the load coefficient was above 0.5, and the total cumulative explained variation of the common factor was 74.694%, which reflected most of the information of the original variables, and proved the validity of the scale. See Appendix 18-d.

### (3) Validity analysis of relationship quality of stakeholders

Exploratory factor analysis was performed on the relationship quality of stakeholders' scale. First, the KMO test and Bartlett spherical test were conducted to determine whether the exploratory factor analysis is suitable for data. It was found that the KMO of the sample was 0.948, and the chi-square of the Bartlett spherical test was 3174.924, the degree of freedom was 171, and the significance was 0.000, which shows the exploratory factor analysis is suitable for

the data in the relationship quality of stakeholders' scale. See Appendix 18-e.

Then, exploratory factor analysis was conducted on the relationship quality of stakeholders' scale through SPSS24.0, and the common factors with eigenvalue higher than 1 were extracted by the maximum variance rotation. The results are shown in the following table. The three common factors extracted were the same as the original questionnaire design. In addition, the commonality of all the questions was above 0.4, the load coefficient was above 0.5, and the total cumulative explained variation of the common factor was 65.759%, which reflected most of the information of the original variables, and proved the validity of the scale. See Appendix 18-f.

#### (4) Validity analysis of customer satisfaction

Exploratory factor analysis was performed on the customer satisfaction scale. First, the KMO test and Bartlett spherical test were conducted to determine whether the exploratory factor analysis is suitable for data. It was found that the KMO of the sample was 0.861, and the chi-square of the Bartlett spherical test was 1440.475, the degree of freedom was 120, and the significance was 0.000, which shows the exploratory factor analysis is suitable for the data in the customer satisfaction scale. See Appendix 18-g.

Then, exploratory factor analysis was conducted on the customer satisfaction scale through SPSS24.0, and the common factors with eigenvalue higher than 1 were extracted by the maximum variance rotation. The results are shown in the following table. The five common factors extracted were the same as the original questionnaire design. In addition, the commonality of all the questions was above 0.4, the load coefficient was above 0.5, and the total cumulative explained variation of the common factor was 66.068%, which reflected most of the information of the original variables, and proved the validity of the scale. See Appendix 18-h.

#### (5) Validity analysis of economic performance

Exploratory factor analysis was performed on the economic performance scale. First, the KMO test and Bartlett spherical test were conducted to determine whether the exploratory factor analysis is suitable for data. It was found that the KMO of the sample was 0.707, and the chi-square of the Bartlett spherical test was 266.534, the degree of freedom was 3, and the significance was 0.000, which shows the exploratory factor analysis is suitable for the data in the economic performance scale. See Appendix 18-i.

Then, exploratory factor analysis was conducted on the economic performance scale through



SPSS24.0, and the common factors with eigenvalue higher than 1 were extracted by the maximum variance rotation. The results are shown in the following table. One common factor extracted was the same as the original questionnaire design. In addition, the commonality of all the questions was above 0.4, the load coefficient was above 0.5, and the total cumulative explained variation of the common factor was 73.470%, which reflected most of the information of the original variables, and proved the validity of the scale. See Appendix 18-j.

### 4.3.3 Verification analysis of hypotheses

#### 4.3.3.1 Correlation between relationship quality of stakeholders and business model innovation

This study first applied Pearson correlation analysis to examine the correlation between relationship quality of stakeholders and business model innovation. The results are shown in Table 4-7.

Table 4-7 Correlation analysis between relationship quality of stakeholders and business model innovation

		Business model innovation	Relationship quality of employees	Relationship quality of external stakeholders	Relationship quality of public stakeholders
Business model innovation	Pearson correlation	1	.661**	.676**	.637**
	Significance (double-tail)		.000	.000	.000
	Number of cases	249	249	249	249
Relationship quality of employees	Pearson correlation	.661**	1	.747**	.757**
	Significance (double-tail)	.000		.000	.000
	Number of cases	249	249	249	249
Relationship quality of external stakeholders	Pearson correlation	.676**	.747**	1	.698**
	Significance (double-tail)	.000	.000		.000
	Number of cases	249	249	249	249

Relationship quality of public stakeholders	Pearson correlation	.637**	.757**	.698**	1
	Significance (double-tail)	.000	.000	.000	
	Number of cases	249	249	249	249

\*\* . \*\*. Significant on the 0.01 level (double-tail).

From the above table, the relationship quality of stakeholders, including employees, external stakeholders and public stakeholders, was significantly related to business model innovation on the 0.01 level, and the correlation coefficient was between 0.637 and 0.676, which represented medium and high correlation. To further verify its influence on business model innovation, this study adopted the regression analysis to verify the results as shown in Table 4-8.

Table 4- 8 Regression analysis results between relationship quality of stakeholders and business model

Model	Unstandardized coefficient		Standardized coefficient		t	Significance
	B	Standard deviation	Beta			
1 (Constant)	2.494	.192			12.998	.000
Relationship quality of employees	.177	.056	.239		3.156	.002
Relationship quality of external stakeholders	.242	.048	.349		5.044	.000
Relationship quality of public stakeholders	.150	.050	.212		3.003	.003
R	0.727					
R square	0.529					
Adjusted R square	0.523					
F	91.740***					

From the above table, the significance P of the regression coefficient between relationship

quality of stakeholders was lower than 0.05, which indicated that the regression model was significant, and the adjusted R square was 0.523, which can explain the total variation 52.3% of the dependent variable, the business model innovation. Therefore, the relationship quality of stakeholders, including employees, external stakeholders and public stakeholders, had significantly positive influences on business model innovation. H1a, H1b, and H1c were established.

**4.3.3.2 Regulating effect of enterprise ethics on the influence of relationship quality of stakeholders on business model innovation**

This study adopted the three variables of enterprise ethics as the regulating variables. With the relationship quality of stakeholders as the independent variable, and the business model innovation as the dependent variable, this study tested the regulatory effect of enterprise ethics on the influence of relationship quality of stakeholders on business model innovation. The results are shown in Table 4-9.

Table 4-9 Test of regulating effect

Variable	Dependent variable						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	
Independent variable	Relationship quality of stakeholders	0.681**	0.676**	0.417**	0.389**	0.534	0.525**
Regulating variable	Ethics for employees	0.280**	0.296**	0.487**	0.648**	0.313	0.441**
	Ethics for external stakeholders	—					
	Ethics for public stakeholders	—					
Interaction item	Ethics for employees*Relationship quality of stakeholders	—	0.136**				
	Ethics for external stakeholders*Relationship quality of	—			0.181**		0.160*

stakeholders							
Ethics for public stakeholders*Relationship quality of stakeholders		——					
	R	0.776	0.788	0.817	0.824	0.766	0.773
	R2	0.603	0.621	0.668	0.679	0.587	0.598
	adj R2	0.599	0.616	0.665	0.675	0.584	0.593
Test value	F value	186.472	133.655	246.931	172.753	175.178	121.490
		**	**	**	**	**	**
	R2	0.603	0.018	0.668	0.012	0.587	0.011
	F	186.472	11.740*	246.931	8.779**	175.178	6.410*
		**	*	**		**	

From the above table, the  $\Delta F$  of Model 2, Model 4, and Model 6 was 11.740, 8.779, and 6.410 respectively, all of which was significant on the 0.05 level, and indicated that the three variables of enterprise ethics regulated the influence of relationship quality of stakeholders on business model innovation. In addition, the regression coefficient of interaction terms were positive and significant, which indicated that the three variables of enterprise ethics positively regulated the influence of relationship quality of stakeholders on business model innovation. Therefore, H2a H2b and H2c were established.

#### 4.3.3.3 Relationship quality of stakeholders and customer satisfaction

This study first applied Pearson correlation analysis to examine the correlation between relationship quality of stakeholders and customer satisfaction. The results are shown in Appendix 19-a.

From the Appendix 19-a., the relationship quality of stakeholders, including employees, external stakeholders and public stakeholders, was significantly related to customer satisfaction on the 0.01 level, and the correlation coefficient was between 0.509 and 0.544, which represented medium correlation. To further verify its influence on customer satisfaction, this study adopted

the regression analysis to verify the results as shown in Appendix 19-b.

From the Appendix 19-b, the significance P of the regression coefficient between relationship quality of stakeholders was lower than 0.05, which indicated that the regression model was significant, and the adjusted R square was 0.326, which can explain the total variation 32.6% of the dependent variable, the customer satisfaction. Therefore, the relationship quality of stakeholders, including employees, external stakeholders and public stakeholders, had significantly positive influences on customer satisfaction. H3a, H3b, and H3c were established.

#### **4.3.3.4 Relationship quality of stakeholders and economic performance**

This study first applied Pearson correlation analysis to examine the correlation between relationship quality of stakeholders and economic performance. The results are shown in Appendix 19-c.

From the Appendix 19-c, the relationship quality of stakeholders, including employees, external stakeholders and public stakeholders, was significantly related to economic performance on the 0.01 level, and the correlation coefficient was between 0.781 and 0.846, which represented high correlation. To further verify its influence on economic performance, this study adopted the regression analysis to verify the results as shown in Appendix 19-d.

From the Appendix 19-d, the significance P of the regression coefficient between relationship quality of stakeholders was lower than 0.05, which indicated that the regression model was significant, and the adjusted R square was 0.793, which can explain the total variation 79.3% of the dependent variable, the economic performance. Therefore, the relationship quality of stakeholders, including employees, external stakeholders and public stakeholders, had significantly positive influences on economic performance. H4a, H4b, and H4c were established.

#### **4.3.3.5 Customer satisfaction and economic performance**

This study first applied Pearson correlation analysis to examine the correlation between customer satisfaction and economic performance. The results are shown in Appendix 19-e.

From the Appendix 19-e., the correlation between customer satisfaction and the dimensions of economic performance, including employee profitability, market share and growth of active users, was significant on the 0.01 level, which indicated that the regression model was significant, and the correlation coefficient was between 0.460 and 0.508, which represented medium

correlation. Therefore, H5a, H5b, and H5c were established.



## **Chapter 5: Case Analysis of Model Application**

### **5.1 Case One: Baidu**

#### **5.1.1 Business model-P4P**

Baidu is the largest search engine website in China and is committed to providing people with the most convenient access to obtain information. Its main business model is P4P (Pay for Performance). Value proposition is an online promotion method at the cost of performance, which provides better opportunities for most small and medium-sized enterprises to develop online marketing, but has also caused some controversy. Baidu's main business profit model is search P4P.

#### **5.1.2 Research on business ethics, relationship quality of stakeholders and customer satisfaction**

##### **5.1.2.1 Analysis of the application status of business ethics**

(1) Analysis of the application status of business ethics for individual users

Baidu P4P is the keyword P4P, which is a mature form of search engine advertising and pays Baidu for corporate products or services in the form of keywords. Its main characteristics include 1) Limited geographical expansion. Baidu can search keywords of some enterprises in the designated region according to their own needs, which provides users with corporate promotion information; 2) Control of maximum daily consumption. The daily maximum spending consumption is limited, the keyword search and the settlement are suspended; 3) Automatic bidding. The maximum bidding information for the keyword is set and the system will automatically compare different bids; 4) Reminder of financial updates. Reminder of account deposits. 5) Prevention of malicious clicks. When people keep visiting the same results and accessing the undefined website of the company, the system will charge each click.

P4P has become Baidu's most important profit source. To realize more profits, it put advertisers or business users at the core, which led to a series of unethical user behaviors. 1) P4P



generated profits and spread false and harmful information through technical interference in search results. 2) P4P criteria were mainly linked to profits instead of information effectiveness. 3) P4P included confusing information, disseminated false information, and infringed on users' right to know. Mixed advertising and non-advertising areas undermined the fairness of information retrieval. 4) P4P damaged users' life and properties. While pursuing the best interests, Baidu P4P failed to consider the immediate interests of users.

(2) Analysis of the application status of business ethics for corporate users

Baidu P4P is a pay-per-use online promotion method, which is characteristic of “quick effect, wide range, and free limitations”. However, Baidu has engaged in many behaviors that violated business ethics: 1) keyword flooding. Baidu P4P mechanism leads to adverse consequences. 2) Unfair competition leading to “ransomware marketing” behaviors. Baidu conducted “ransomware marketing” on some websites by “blocking the search results”. The ransomware marketing essentially resulted from Baidu's abuse of its monopoly position in the search engine industry.

(3) Analysis of the application status of business ethics for employees

In the Social Responsibility Report released by Baidu, Baidu greatly valued the cultivation of moral behaviors of employees, including regulations on personal growth, physical and mental health, and basic rights and interests of employees. However, it frequently violated the ethics of employees. For example, internal promotion management, negative social effects of Baidu on employees' mental state, and endless overtime working have all hurt the employees.

(4) Analysis of the application status of business ethics for public stakeholders

The disadvantage of Baidu P4P is that it lacks a sense of social responsibility and incurs unethical behaviors to public stakeholders.

Baidu failed to distinguish the relationship between basic business and value-added business. The search function is a basic service that should bear social responsibility, be responsible to public stakeholders, and provide an accurate and convenient track to access information. In terms of value-added business, the technical application of core business model, P4P, should be carefully considered and screened.

### **5.1.2.2 Analysis of the relationship quality of stakeholders-Baidu**

(1) Analysis of the relationship quality of individual users-Baidu

Baidu needs to accomplish hundreds of millions of searches every day and is the largest and most comprehensive Chinese search engine in the world. The number of daily active users of Baidu Mobile Search has exceeded 100 million. In 2018, the operating revenue of Baidu officially exceeded RMB 100 billion. P4P advertising is Baidu's core profit model and has been criticized by users and society. The enterprises recommended by Baidu have repeatedly been found to have quality problems, and thus users have gradually lost their trust in Baidu. Baidu's business model innovation should bear social responsibility in order to maintain the corporate brand and reputation.

### (2) Analysis of the relationship quality of corporate users-Baidu

Baidu had a market value of USD 64 billion. The number of monthly active users (MAU) of Baidu was 660 million, the number of monthly active users (MAU) of Baidu maps was 348 million, and the number of monthly active users (MAU) of Baidu wallet was 90 million. Baidu's revenue in 2018 reached RMB 84.809 billion, realizing a year-on-year growth of 20.2%.

The article Search Engine Baidu is Dead has become popular on the Internet. It accused that the search results of Baidu mostly pointed to its own product, Baijiahao, and has gradually become the platform for marketing and low-quality content. The search incident of Baidu also resulted in a 6.4% reduction in its stock price on January 23, 2019.

Following the Wei Zexi Incident, Baidu's unaudited financial report for the second quarter of fiscal 2016 showed that net profit for the second quarter was RMB 2.414 billion (approximately USD 363.2 million), which decreased by 34.1% year on year. The Wei Zexi Incident reminded Baidu that regarding the issues of social livelihood, the business values of an enterprise should be subject to its social responsibilities".

### (3) Analysis of the relationship quality of employees-Baidu

Baidu employees believed that Baidu has valued its users since its establishment. Baidu has fulfilled its responsibilities to netizens, but now its products were facing huge commercial pressure. Another employee said that many of Baidu's problems today were not technology related, but product related. This opposition to the corporate philosophy was common among Baidu employees. A former Baidu employee said in the article How Baidu employees view the Wei Zexi Incident: Baidu has a lot of principles. Some people quoted a sentence in Shawshank redemption which means that facing the strength of the company, employees can only give up

their ego to keep their jobs. Work pressure and rank separation have led to a high turnover rate of employees.

(4) Analysis of the relationship quality of public stakeholders-Baidu

The ways to regulate Internet products and services include system construction and public supervision; corporate self-discipline. Baidu should establish correct corporate ethical values and assume due social responsibility. The Wei Zexi Incident was a major test for Baidu. After the incident, discussions on Baidu’s corporate culture and values were raging, which triggered public crusade against Baidu P4P business model.

**5.1.2.3 Research on customer satisfaction and economic performance of Baidu**

(1) Statistical survey on customer satisfaction of Baidu

A total of 243 platform-based corporate customer satisfaction questionnaires (questionnaire B) were collected, of which 58 were about Baidu. According to the Likert seven-level scale, the data in different customer satisfaction dimensions are shown in Table 5-1. Specifically, the overall customer satisfaction of Baidu was low, and the overall ranking was customer loyalty>perceived product quality>corporate image>perceived service quality>customer complaints, which was closely related to the corporate performance of Baidu in recent years. Baidu P4P business model lacked a sense of corporate responsibility and hurt stakeholders, which further affected the quality of stakeholder relationships.

Table 5- 1 Overall customer satisfaction survey results of Baidu search

Level Two indicators	Level Two indicators	Mean
Enterprise image	Enterprise image	3.1602
	Perceived service quality	3.1385
	Perceived product quality	3.2416
	Customer complaints	2.4096
	Customer loyalty	3.3950

(2) Analysis of the economic performance of Baidu

As a public listed company, Baidu has disclosed its financial information every year, and the relevant data are highly reliable. Therefore, relevant data were directly adopted in the analysis of economic performance in this study. For more details, please refer to Appendix 6, 7 and 8. The

economic benefits of Baidu encountered sharp fluctuations in 2015 and 2016. Its market share also decreased while the number of active users also declined. These phenomena are related to the conflicts between business model innovation and stakeholders of Baidu.

### 5.1.3 Analysis of the business model canvas

Baidu was analyzed based on the nine elements of Osterwalder (2008) business model. See Table 5-2 Analysis of the business model canvas of Baidu.

Table 5-2 Baidu search business model canvas analysis

<b>Important cooperation</b>	<b>Key business</b>	<b>Value service</b>	<b>Customer relations</b>	<b>Customer group</b>
Free customer Agent	Development and maintenance platform Resist illegal users Responding to complaint	Search service Promoting ads	Long-term relationship between customers Customer trust	Member Customers who need Advertising services Users who need to retrieve information
	<b>Core resources</b>		<b>Channel access</b>	
	Website platform Brand reputation Founder and employee		The Internet	
	<b>Cost structure</b>		<b>Source of income</b>	
	Employee salary, office and equipment rental Legal professional service		Auction ranking advertising fee Membership fee	

From the analysis of the business model canvas of Baidu, important cooperation of Baidu includes free customers, agents; key businesses include develop and maintain the platform, boycott illegal users, and respond to complaints; value services include retrieval services and advertising promotion; customer relationships include maintain long-term customer relationships and customer trust; customer groups include members, users requiring information retrieval, and customers requiring advertising services; cost structure includes employee salaries, offices and equipment rents, legal professional services; income sources include P4P advertising fees and

membership fees.

The marketing pipeline of Baidu consists of direct sales and agency. Specifically, Baidu will return credits to agents, which invisibly increases the labor costs. With its own search engine technology and established information base resources, Baidu has attracted massive users, resulting in the brand effect of Baidu search and constructing an efficient profit model. The P4P charges the enterprises by the number of clicks.

When the number of users of the Baidu P4P business model is higher, the costs are lower, which has become Baidu's main profit model. This profit model only considers the economic performance of the enterprise and ignores the quality of stakeholder relationships. P4P violated the ranking fairness of search results and prevented users from searching for real information, which had an adverse effect on Baidu, triggered public criticism, and resulted in a decline in user satisfaction, thus affecting the economic performance of Baidu.

#### **5.1.4 Summary**

Baidu covered 97.5% of Chinese netizens and had 600 million users and an average of 6 billion searches per day. Baidu has established its mission, vision and core values, and become one of the most valuable brands in China. However, recent criticisms of Baidu were closely related to the contradictions and conflicts of stakeholders creating the corporate value. The external evaluation of stakeholders has affected the economic performance of Baidu.

## **5.2 Case Two: Taobao**

### **5.2.1 Business model of Taobao**

Since its establishment in March 1999, Taobao has been developing with bold and innovative business models. Taobao's main businesses include C2C (person-to-person) and B2C (business-to-person). The registered members of Taobao include most of China's online shopping users, and the transaction volume of Taobao accounts for more than 80% of the Chinese online shopping market. In addition, Taobao's C2C Internet market has become a comprehensive retailing circle consisting of C2C, distribution, auction, direct supply, crowdfunding, customization, and other e-commerce models. Taobao has removed middlemen and allowed

businesses to directly communicate with individual buyers. For example, the diversified and cost-effective group-buying platform launched by Taobao in 2010 provides customers with not only low-price products but platforms and promotion opportunities. In the 2017 Double Eleven Shopping Festival, Taobao's transaction volume reached 21.86 billion euros, and Taobao's transaction volume in the mobile Internet accounted for 90%, with 225 countries and regions participating.

The ecological innovation of Taobao includes three elements: Alitalk-online information distribution, payment system-Alipay, and offline logistics system. Alitalk has improved user experience through online customer services. The platform+free business model firmly grasps the practitioners, while the payment system has enhanced the competitiveness of enterprises and provided a guarantee on market operation. All these have formed the unique business model innovation of Taobao and realized the development of economic benefits.

## **5.2.2 Research on business ethics, relationship quality of stakeholders and customer satisfaction**

### **5.2.2.1 Analysis of the application status of business ethics**

#### (1) Analysis of the application status of business ethics for individual users

Taobao is the e-commerce platform of Alibaba and has opened up the Chinese e-commerce market, allowing everyone to shop online without leaving home.

However, many ethical issues are involved in the virtual online trading process. 1) Products with false information and counterfeit products are frequent. Through picture information, businesses beautify the visual perception of their products and mislead customers. Although Taobao has established a related punishment system, the fake products based on scalping (false transaction records, and false reputation ratings) have become a major drawback of Taobao. 2) Businesses guides blind consumption by disguised marketing. Taobao has formulated the deposit-based marketing model for the Double Eleven Shopping Festival. In addition, customers can enter the store homepage to receive coupons. Various marketing activities are all price discrimination. Through the discount superposition, Taobao diverts customers' attention and urges consumers to persuade themselves. 3) The credit evaluation system is unreasonable. In order to reduce negative reviews, it is common that businesses harass customers and require them

to give positive reviews.

(2) Analysis of the application status of business ethics for businesses

Taobao innovatively developed the credit evaluation system based on the mutual evaluation of buyers and sellers and the store scoring model after transactions are made and the payment system represented by Alipay. Although this innovation has enhanced user experience, the lack of systems and poor management have produced many phenomena that violate business ethics.

Taobao suppressed small and medium-sized businesses, and thus the small and medium-sized Taobao businesses proposed six appeals: Abolish the unreasonable regulations, improve the imperfect assessment system, establish fair and transparent charging system, hold hearing on important rules, and abolish the unreasonable credit deposit system. The imperfect system innovation of Taobao caused the following problems in daily transactions: 1) The number of invalid orders has increased. The 7-day return system of Taobao has led to fraudulent consumption, reduced business efficiency, and increased business costs. 2) Malicious promotion. Businesses are forced to cater to Taobao's promotional activities, and thus reduce product quality or increase prices, thus forming vicious market competition.

(3) Analysis of the application status of business ethics for the society

Taobao has connected markets in different spaces and satisfied the needs of cross-region purchases, thus reducing shopping costs, encouraging mass entrepreneurship, and promoting the development of related industries. However, it has also resulted in some negative effects. (1) The competitive ecology of the industry is damaged. Frequent price wars have destroyed the rational industrial competition ecology to a certain extent. 2) The industrial ecology is not sound, and the supporting capacity of the logistics system is insufficient, resulting in loss of goods. Taobao's promotion method and huge transaction volume have also brought tremendous pressure to the logistics industry, resulting in personnel shortages, loss of goods, quality problems and bad service attitudes. In addition, customer complaints are more serious especially during large-scale promotions.

**5.2.2.2 Analysis of the relationship quality of stakeholders**

(1) Analysis of the relationship quality of customers

At the end of 2016, the Office of the United States Trade Representative included Taobao into the notorious market list, which was the second time Taobao had been listed on the notorious

market list since 2011.

Data from China Industry Research Network shows that in 2015, the two brands with the highest transaction volume in men's and women's clothing in Tmall, Jack Jones and Hstyle had refund rates of 38.25% and 64.09%. The return rate for the 2016 Double Eleven Shopping Festival reached 25%, and the return rate of some businesses reached 40%. On the one hand, the scalping behaviors of false transactions were obvious. On the other hand, customers agreed on product quality, brand authenticity, color difference, and price. According to statistics, in 2017, the compliant rate of Taobao reached 18.87%, and the user satisfaction of Taobao ranked 10th while Alipay, the supporting system of Taobao, ranked fourth. Obviously, Taobao has encountered problems in the internal corporate management, and its failure to meet the demands of stakeholders has led to a decline in user satisfaction.

(2) Analysis of the relationship quality of businesses

As a platform enterprise, Taobao is highly dependent on businesses. However, it fails to maintain stable relationships with businesses. For example, the new rules of Taobao triggered a group incident. After Taobao used its monopoly advantages to forcibly increase technical service fees and deposits, a large number of small and medium-sized businesses became strongly dissatisfied. The growth of Taobao cannot be separated from the businesses, while the businesses have also developed through the Taobao platform. The relationship quality of the platform and the businesses is the guarantee for the smooth development of the platform enterprise.

**5.2.2.3 Analysis of the customer satisfaction and economic performance**

(1) Analysis of the customer satisfaction of Taobao

A total of 243 platform-based corporate customer satisfaction questionnaires (questionnaire B) were collected, of which 63 were about Taobao products. According to Likert seven-level scale, the data in different customer satisfaction dimensions are shown in Table 5-3. The overall customer satisfaction of Taobao products was medium. The corporate image and the product quality of Taobao have affected the average customer complaints.

Table 5- 3 Overall customer satisfaction survey results of Taobao

Level 1 indicator	Level 2 indicator	Mean
Customer satisfaction	Enterprise image	3.2572



Perceived service quality	3.5230
Perceived product quality	3.6446
Customer complaints	3.1001
Customer loyalty	3.4160

(2) Analysis of the economic performance of Taobao

According to the information disclosed by Taobao financial reports, Taobao has maintained a good revenue, and stable growth of customers and businesses, which is related to customer loyalty. However, the economic performance of Taobao declined in 2016 and 2017. During this period, some negative information appeared, which may cause some impact. In the meanwhile, the corporate investment costs increased as shown in Appendix 9 and Appendix 10.

**5.2.3 Analysis of the business model canvas of Taobao**

Taobao was analyzed based on the nine elements of Osterwalder (2008) business model. See Table 5-4 Analysis of the business model canvas of Taobao.

Table 5-4 Taobao network business model canvas analysis

Important cooperation	Key business	Value service	Customer relations	Customer
Free customer	Development and	Trading	Focus on customer	group
Consumer	maintenance platform	platform	maintenance	Buyers and
	Resist illegal users	Third-party	Customer trust	sellers of
	Responding to	payment		goods
	complaint	platform		
	Core resources	Instant	Channel access	
	Website platform	communication	the Internet	
	Brand reputation	Credit rating		
	Founder and	Rights channel		
	employee	after-sale		
		warranty		

Cost structure	Source of income
Employee salary, office and equipment rental	Transaction service fee, store service fee
Legal professional service	Value-added service fee, online advertising

From the analysis of the business model canvas of Taobao, important cooperation of Taobao includes free customers and consumers; key businesses include develop and maintain the platform, boycott illegal users, and respond to complaints; value services include transaction platform, third-party payment platform, instant communication, credit evaluation, rights protection channels, and after-sales guarantee; customer relationships include value customer maintenance and customer trust; customer groups include buyers and sellers; cost structure includes employee salaries, offices and equipment rents, and legal professional services; income sources include transaction service fees, store service fees, value-added service fees, and online advertising.

Taobao's free model has attracted countless buyers and sellers. Its transaction communication tool has provided communication convenience for buyers and sellers; Taobao has developed Alipay to build a reliable environment for online transactions and ensure the safety of transaction funds; Taobao has also established a humanized customer service system consisting of after-sales credit evaluation, advance compensation and protection priority of consumer interests. The construction of these value services has attracted a large number of users to Taobao, which has been recognized by stakeholders and has also achieved satisfying economic performance. However, with the development of Taobao, the platform disadvantages have also emerged: businesses on the platform sell inferior products and fakes are flooded; false credit, the fake credit of junior sellers and Taobao's poor management have affected customer relationships, triggered negative reactions from stakeholders, reduced the stock value in the capital market, and influenced the corporate economic performance.

#### 5.2.4 Summary

Taobao has a clear product positioning and a perfect product system. It has established a sound product ecology and gathered a large number of businesses and consumers. In addition, its business model is original and innovative. However, with the development of e-commerce, the extensive development model has resulted in a series of problems, triggered conflicts among

stakeholders, affected the relationship quality, and caused fluctuations in Taobao's profitability and stock prices.

### **5.3 Case Three: Tencent WeChat**

#### **5.3.1 Business model of WeChat**

WeChat is an instant messaging product launched by Tencent on January 21, 2011. According to the data released by the Tencent Group, as of the end of 2016, the number of monthly active users of WeChat was 889 million, making WeChat the most popular social platform for Chinese users. WeChat businesses refer to the business model of WeChat as a social platform for information dissemination, information sharing, information promotion, sales and profit of final products and services.

The value proposition of WeChat is that WeChat is a way of life. It provides users with not only the communication software but the life information platform. WeChat never charges and maintains a green interface, which helps it win 300 million loyal users. The four profitable directions of WeChat commercialization include game profitability, mobile marketing profitability, e-commerce profitability, and advertising profitability.

#### **5.3.2 Research on business ethics, relationship quality of stakeholders and customer satisfaction**

##### **5.3.2.1 Analysis of the application status of business ethics for WeChat**

###### **(1) Analysis of the application status of business ethics for individual users**

WeChat has become a way of life. At present, WeChat has a huge number of users and a huge influence. As an instant messaging software, WeChat provides excellent user experience and a solid user reputation. 1) WeChat respects customer privacy. Users are allowed to freely select and set privacy permission levels, add friend permissions, authorize moments, manage and clarify location information through third-party authorization, thus protecting their privacy. 2) WeChat ensures information authenticity and security and formulates a rumor blocking and reminder system. 3) WeChat values user experience, sets product content forms of different natures, such as public accounts and subscription accounts, and controls the advertising frequency, which has

improved WeChat brand recognition and maintained quality user experience.

(2) Analysis of the application status of business ethics for corporate users

WeChat has many corporate users. The ethical behaviors of the WeChat platform are mainly reflected in the following aspects: 1) WeChat provides technical support for the B-end corporate user groups. WeChat products provide corporate users with comprehensive support from technology to services in online and offline channels. 2) WeChat establishes the originality declaration protection. 3) WeChat adheres to constructing a public platform. With increasing business partners, the development of the WeChat platform still adheres to public equivalent use of data and information and builds a secure transaction environment.

(3) Analysis of the application status of business ethics for the government

WeChat assists the government in undertaking social responsibilities. 1) WeChat establishes professionals to carry out special management on issues involving violations of national laws, regulations, policies, public order, customs, and social morality, such as infringement, disclosure, rumor, harassment, advertising, and spam. 2) WeChat disseminates government policies, assists in setting up public accounts of government departments and constructing national smart cities, serves the government and the public, supports targeted poverty alleviation, co-governs cybersecurity, and helps improve the government's ability to provide public services.

(4) Analysis of the application status of business ethics for society

In 2017, the number of the monthly active users of WeChat was nearly 1 billion; 580,000 mini-programs went online with 170 million active users; the number of enterprises registered on WeChat exceeded 1.5 million and the number of the monthly active users was 30 million, which has driven the information consumption to RMB 209.7 billion. Since 2014, the average annual growth rate has been maintained over 30%, and WeChat accounted for 4.7% of China's total information consumption; WeChat covered consumption scenarios in the fields of travel, catering, shopping, and hotel tourism; promoted the integration of technologies such as the Internet, artificial intelligence, and big data with the real economy, and driven a 43.407 billion euros increase in traditional consumption.

### **5.3.2.2 Analysis of the relationship quality of stakeholders**

(1) Analysis of the relationship quality of individual users

In 2017, the number of monthly active users of WeChat reached 889 million, which has directly driven information consumption of 22.65 billion euros. In 2016, the transaction volume of WeChat users increased significantly compared with 2015, and 45% of users had more than 200 WeChat friends. It can be seen that users were becoming increasingly dependent on WeChat and their loyalty to products was higher.

(2) Analysis of the relationship quality of corporate users

WeChat organizes various offline and online events every year, and actively communicates and shares with corporate users through partner meetings, supplier meetings, and industrial reports. The quality of communication between the two parties is very high. WeChat has played an important role in promoting the informatization of SMEs. 70% of enterprises have established their public WeChat accounts; WeChat has greatly driven the development of small, medium and micro-sized businesses, and become a recognized entrepreneurial incubation platform with an employment population of 10.7 million, which shows that corporate users trust WeChat products.

(3) Analysis of the relationship quality of public stakeholders

WeChat has extensive social influence and plays a significant role in government public management innovation. It has contributed to helping the government to increase transparency and promote employment. Nearly 100 million people participated in the public welfare activities initiated by WeChat. The development of WeChat has led to ecosystem innovation. Every individual or organization on the WeChat platform has become a part of the ecosystem and closely interacted with each other. Therefore, WeChat has become an inseparable part of public social life and is closely integrated with stakeholders, forming a high-quality relationship.

### **5.3.2.3 Research on customer satisfaction and economic performance of WeChat**

(1) Analysis of the customer satisfaction of WeChat

A total of 243 platform-based corporate customer satisfaction questionnaires (questionnaire B) were collected, of which 66 were about WeChat products. According to Likert seven-level scale, the data in different customer satisfaction dimensions are shown in Table 5-5. The overall customer satisfaction of WeChat products was medium, which is closely related to the focus on WeChat products on the relationship quality of stakeholders, the corporate social performance and the customer experience.

Table 5-5 Statistical survey on corporate customer satisfaction of WeChat

Level 1 indicator	Level 2 indicator	Mean
Customer satisfaction	Enterprise image	3.7517
	Perceived service quality	3.3583
	Perceived product quality	3.81657
	Customer complaints	3.6859
	Customer loyalty	3.8820

(2) Analysis of the economic performance of WeChat

As a public listed company, Tencent has disclosed its financial information every year, and the relevant data are highly reliable. Therefore, relevant data were directly adopted in the analysis of economic performance in this study. For more details, please refer to Appendix 11 and Appendix 12. Specifically, the economic performance of WeChat products has risen steadily while WeChat users are highly active.

**5.3.3 Analysis of the business model canvas of WeChat**

WeChat was analyzed based on the nine elements of Osterwalder (2008) business model. See Table 5-6 Analysis of the business model canvas of WeChat.

Table 5-6 Analysis of the business model canvas of WeChat

Important cooperation	Key business	Value service	Customer relations Link users and users	Customer group personal user
Free customer Life service business	Development and maintenance platform	Social and information sharing	Customer trust	Organization user
	Resist illegal users	Traffic entry		
	Responding to complaint	Public opinion ethics		
	Core resources		Channel access	

Website platform	Internet
Brand reputation	Self-media
Founder and employee	
Cost structure	Source of income
Employee salary, office and equipment rental	Corporate advertising fees, corporate traffic entrance fees. Value-added service fee, online advertising
Legal professional service	

From the analysis of the business model canvas of WeChat, the important cooperation of WeChat includes free customers and life service businesses; key businesses include develop and maintain the platform, boycott illegal users, and respond to complaints; value services include socializing and information sharing, and traffic entrance; customer relationships include customer connection and customer trust; customer groups include individual users and organizational users; channels include Internet and we-media; core resources include website platforms, brand reputation, founders and employees; cost structure includes employee salaries, office and equipment rents, and legal professional services; income sources include corporate advertising fees, corporate traffic entrance fees, value-added service fees, and online advertising.

WeChat is a way of life, but more of a business model. Essentially, WeChat is a social network based on acquaintances. WeChat has gathered a large number of free users through a free model, laying the foundation for the commercialization of WeChat, including O2O, e-commerce, games and different life fields. As a social platform, WeChat has established an information evaluation mechanism to manage information that violates social ethics and has gained user recognition. In addition, WeChat has maintained customer relationships, established brand reputation, and gained stakeholders by connecting people, thus forming a benign circle, promoting further product development and enhancing the user stickiness.

### 5.3.4 Summary

The business model of WeChat products is highly innovative. According to relevant data statistics, the number of current WeChat users has reached 1 billion, and the proportion of

WeChat users in the questionnaire survey has reached 92.97%, while only 7.03% have never used WeChat. WeChat has established a super user community. The extensive customer base shows that WeChat values the common interests of stakeholders, and focuses on business ethics, which has promoted the development of corporate economic benefits. However, some people are concerned about the potential hazards in WeChat' s extensive product and user systems:

In business model innovation, WeChat has considered the needs of stakeholders and business ethics, which helps to maintain the relationships between WeChat and stakeholders. In the meanwhile, it has also resulted in high customer satisfaction and yielded economic benefits. 1) Negative information about rumors. Although WeChat has adopted a series of warning measures to strengthen its governance, the huge user group is still in crisis. 2) Public confidence in security. Convenient information means such as WeChat payment and WeChat scanning have been widely used, but will lead to the leakage of user information. How to protect user privacy is worth noting. 3) Organizational dangers of illegal activities. WeChat has been used to set up illegal organizations to conduct activities such as gambling, which has also put forward higher regulatory requirements for WeChat group management and content management.



## Chapter 6: Conclusions and Discussion

### 6.1 Summary

With the progress of information technology, Chinese Internet enterprises have grown rapidly. Internet enterprises represented by Alibaba, Baidu, and Tencent have achieved great success. In order to succeed from the fierce industrial competition, Chinese Internet enterprises have proposed diversified business model innovations. However, profit-seeking development mode has also brought ethical conflicts between business innovation and stakeholders, leading to a general decline in customer satisfaction and hindering the sustainable development of the industry.

This study investigates the business model innovation of Chinese Internet enterprises from the perspective of stakeholders and raises the following research issues:

- (1) Analysis of the business model innovation and development path of Chinese Internet enterprises.
- (2) Business ethics conflicts in the business model innovation of Chinese Internet enterprises.
- (3) Basic elements of the business model innovation structure of Chinese Internet enterprises.
- (4) Impact of the business model innovation on stakeholders in the value creation process of Chinese Internet enterprises;
- (5) Relationship between business model innovation, business ethics, relationship quality of stakeholders and corporate performance in the value creation process of Chinese Internet enterprises.

In this study, the platform products of three listed Internet enterprises were studied, and the questionnaire data was collected in both online and offline channels. Then, the model was verified by statistical methods, such as Pearson correlation analysis, confirmatory factor analysis, and multiple regression analysis. In the meanwhile, the application of the model in three cases was verified and analyzed in three cases. Finally, the countermeasures and suggestions for the business model innovation, business ethics, and stakeholder coordination of Chinese Internet

enterprises were proposed.

## **6.2 Research conclusions:**

### (1) Progressive and subversive business model innovation.

The business model innovation of Chinese Internet enterprises has promoted the progress of Chinese Internet industry; then the innovation progress of Internet technology has promoted the upgrade and development of Internet business models, which can basically be divided into five stages: platform+free business model, Internet community economy business model, Internet+industrial chain O2O business model, Internet+cross-industry ecological network business model, mobile Internet+sharing economy business model; the application and spread of big data, cloud computing, and artificial intelligence have further catalyzed the development of the Internet business models. Every business model innovation of the Chinese Internet enterprises has subverted the traditional business model, which has a significant impact on stakeholder collaboration, user quality management, and corporate performance.

### (2) Conflicts of business ethics in the business model innovation of Chinese Internet enterprises

As economic organizations, enterprises achieve their fundamental goals-pursuing profits through product development and production. The conflict between innovation and business ethics is worsened, which hinders the benign growth of corporate performance.

In this paper, from the perspective of stakeholders, the Business Model Innovation-Conceptual Model of Performance Structure for Chinese Internet platforms was proposed. The progress of the Internet has dramatically subverted the traditional business model, and the influencing factors of stakeholders have also changed. Based on the composition of business models and the theories of stakeholders, the business model innovation-conceptual model of performance structure was reconstructed considering the needs and characteristics of the Chinese market, and the factors and development trends of business model innovation of Internet enterprises were systematically studied.

### (3) Basic elements of the business model innovation structure of Chinese Internet enterprises

The basic elements of a reasonable business model innovation structure include value

proposition, business ethics, stakeholders, and corporate performance.

In the Internet era, based on emerging Internet technologies, enterprises innovate management organizational models and improve production processes and business models to create value for customers. In order to realize business model innovation, many enterprises ignore the interests and ethical management of related groups outside the target group. Even if they have obtained benefits, it is difficult to lay the foundation for future corporate development.

In this paper, the structural model of Business Model Innovation-Corporate Performance was proposed to verify the problems in business model innovation.

(4) Four elements in the value creation process of Chinese Internet enterprises: business model innovation, business ethics, relationship quality of stakeholders, and corporate performance are interactive and mutually influencing

Through analysis of the survey questionnaires and data, the interaction among business model innovation, relationship quality of stakeholders, customer satisfaction, and economic performance was verified. The specific results are as follows:

**I. The relationship quality of stakeholders has a positive impact on the business model innovation.**

According to the survey data, the business models of the case enterprises are highly innovative and have no significant difference. It is found that the relationship quality of stakeholders of Internet platform enterprises has a positive impact on the business model innovation. (1) Value maintenance innovation has the greatest impact which directly affects all the stakeholders in the innovation process. (2) The other three innovation elements: value realization, value advocacy, and value network are moderately related to the relationship quality of stakeholders.

**II. Business ethics has a regulating effect on the business model innovation and the relationship quality of stakeholders: business ethics is a regulating factor that affects the relationship quality of stakeholders in business model innovation.**

The verification results show that business ethics can dynamically regulate the business model innovation and the relationship quality of stakeholders. It is found that business ethics has a significant impact on the relationship quality of employees, external and public stakeholders, which proves the importance of employees as stakeholders in corporate innovation.

**III. There is a significantly positive correlation between the relationship quality of stakeholders and customer satisfaction:**

The verification results show that the relationship quality of stakeholders has a positive impact on customer satisfaction.

The case investigation and multiple regression analysis show that customer satisfaction is significantly affected by the relationship quality of stakeholders, and responds to changes accordingly.

Customer satisfaction with service quality, product quality and corporate image is significantly affected by both the relationship quality of employees and external stakeholders; in the meanwhile, customer satisfaction is also affected by the relationship quality of public stakeholders.

Therefore, as enterprise members, employees participate in all the business activities, and their performance directly affects customer satisfaction. External stakeholders include customers, suppliers, and customer partners who also affect corporate performance as they are directly or indirectly related to the enterprises.

In business model innovation, enterprises attach increasing importance to the construction of corporate image. The data research shows that the customer satisfaction of corporate image has a close impact on all the customer satisfaction dimensions, and that customer loyalty has a close effect on customer complaint rates.

**IV. There is a significantly positive correlation between the relationship quality of stakeholders and the economic performance:**

Through data analysis, the relationship quality of stakeholders has a positive impact on economic performance. The rankings of impact in the ascending order are: (1) General impact: the relationship quality of employees; (2) greater impact: the relationship quality of public stakeholders; (3) the greatest impact: the relationship quality of external stakeholders. The corporate operation and management as well as the user response will all be affected by the relationship quality of external stakeholders.

The relationship quality of public stakeholders has an average effect on the economic performance dimensions. External stakeholders have an important impact on the corporate

development. In the three economic performance dimensions, the correlation between corporate profitability and market share is relatively significantly, followed by the growth rate of market active users.

**V. There is a significantly positive correlation between the customer satisfaction and the economic performance:**

The case analysis and multiple regression analysis show that the customer satisfaction and economic performance are positively correlated. The rankings of impact in the ascending order are: (1) moderate impact: perceived service quality; (2) moderate impact: corporate image; (3) moderate impact: perceived product quality; (4) moderate impact: customer complaints; (5) customer loyalty. Among the above five points, customer loyalty has the biggest impact on economic performance. It can be seen that customer satisfaction is very important to the business model innovation of platform Internet enterprises.

**6.3 Value and significance:**

1. Review the relationship between business ethics, stakeholders, and business model innovation, and discover the problems in business model innovation of Internet platform enterprises.

Investigate business ethics, stakeholders, and business model innovation, explore their relationships with corporate performance, and analyze the contradictions and perplexities in business model innovation.

2. Promote the construction of business ethics of Chinese Internet platform enterprises.

Discuss the business model innovation of Internet enterprises from the perspective of business ethics which can enhance the attention and application of business ethical elements in management practice, and promote the healthy and sustainable development of Internet business model innovation.

3. Enrich the research concerning the business model innovation of Internet enterprises

Value creation of enterprises contains two aspects: economic value creation and social value creation. The ethical factors of stakeholders in business model innovation are evaluated, while the

ethical elements, relationship quality of stakeholders, customer satisfaction, and economic performance are integrated in corporate management practices to guide the enterprises in healthy and sustainable business model innovation, and further enrich the research on the business model innovation of Internet enterprises.

4. Regulate business ethics, safeguard the rights and interests of stakeholders, and ensure the smooth growth of Chinese Internet platform enterprises

The innovation of Chinese Internet industry has subverted the traditional business models. Based on the market development characteristics of Chinese Internet industry, the business model innovation performance structure model of Internet enterprises is constructed and further research is conducted. Regulating business ethics and safeguarding the rights and interests of stakeholders is of practical significance for the smooth growth of Chinese Internet platform enterprises.

## **6.4 Suggestions on practical applications**

### **6.4.1 Suggestions for Internet enterprises**

(1) In product business model innovation, Internet enterprises must manage their stakeholders in a differentiated manner

Enterprises interact with their stakeholders. The business activities of Internet platform enterprises involve stakeholders in different fields. The research data show that in the face of market competition, enterprises will relate with different market stakeholders, and respond differently in terms of customer satisfaction and corporate economic performance in different application scenarios. It is suggested that in business model innovation, enterprises should rank the interests of stakeholders according to the actual situation while satisfying the needs of corporate development, thus coordinating the interests of different related parties.

(2) Value business ethics, assume corporate responsibilities, and promote the coordinated development of business model innovation

In recent years, due to the frequent Internet corporate ethical scandals, the ethical construction of Internet enterprises has attracted widespread attention. Business ethics has become an important evaluation criterion for Internet enterprises. Although many enterprises have valued

business ethics, they have not considered business ethics or business model innovation at the same level, affecting the sustainable development of business models.

(3) Strengthen the quality training of product developers and improve user experience

Good ideas do not necessarily output good products, while products with high economic benefits are not necessarily products that conform to social responsibility. Internet enterprises should further strengthen the quality development of product developers, enhance the sense of social responsibility, and improve user experience and user satisfaction.

#### **6.4.2 Suggestions for the government**

(1) Provide policy guidance on the business model innovation of Internet enterprises

It is generally believed that strengthening and improving the construction of legal and regulatory systems can better promote enterprises to assume their social responsibilities and improve their ethical management. The current Chinese Internet industry is subjected to incomplete laws and regulations, which requires the government departments to provide guidance and supervision to Internet enterprises, strengthen the construction of legal systems, improve the ethics supervision and restraint mechanism of Internet enterprises, and actively guide Internet enterprises to establish internal ethical management and assume their social responsibilities. For example, Internet enterprises may improve the reward and punishment mechanism, establish the specialized management departments, and implement guidance and management.

(2) Expand ethical education for Internet business managers and the public

An important reason for the frequent Internet corporate ethical scandals is the late start of the domestic research on business ethics and social responsibilities as well as the relatively weak awareness of business ethics. It is necessary to raise the ethical awareness of the public, strengthen the ethical education of enterprises from all aspects, establish an excellent public atmosphere, and promote correct guidance of public opinions.

#### **6.5 Research limitations and prospects**

(1) In this paper, the problems of customer satisfaction caused by Internet business model innovation were discussed. An interactive model of business model innovation, business ethics,

stakeholders, and corporate performance was constructed to explore the relationship quality of stakeholders. This research perspective is still immature and only serves as a preliminary discussion. More profound research can be conducted in the future.

(2) The business model innovation of Internet enterprises is currently developing in China, and the stakeholder composition cannot be solidified. Therefore, the research results are dynamic, while this study did not consider the weights or dynamics of stakeholders. At present, the stakeholder theory is also developing. In the future, the new stakeholder theory can be combined with the different development stages of Chinese Internet enterprises in further research.

(3) In this study, three top Chinese Internet platform enterprises were investigated in the sample research. Only a few enterprises were sampled and lacked broad representativeness. Baidu, Alibaba, and Tencent are Internet enterprises in different fields. Their business model innovations have become monopolized, which limits the research on them. In the future, the number of sample enterprises can be expanded while enterprises at different development stages can be discussed in follow-up research to further improve the research results.



## Bibliography

Afuah, A. & Tucci, C. (2001). *Internet Business Models and Strategies: Text and Cases*. Boston: McGraw-Hill/Irwin.

Amit, R. & Zott, C. (2001) Value Creation in E-Business. *Strategic Management Journal*, 22(6/7), 493-520.

Amit, R. & Zott, C. (2007). Business Model Design and the Performance of Entrepreneurial Firms. *Organization Science*, 2007(2).

Anderson, E. W. & Mittal, V. (2000). Strengthening the Satisfaction-Profit Chain. *Journal of Service Research*, 3(2):107-120.

Anderson, E. & Weitz, B. A. (1992). The Use of Pledges to Build and Sustain Commitment in Distribution Channels. *Journal of Marketing Research*, 29(2):18-34.

Brunk K. H. (2010). Exploring origins of ethic company/brand perception: a consumer

Caniels, M. C. & Gelderman, C. J. (2007). Power and Interdependence in Buyer Supplier Relationships: A Purchasing Portfolio Approach. *Industrial Marketing Management*, 36(2):219-229.

Chen, B.F. & Zhou, Z.C. (2000). *Introduction to Corporate Ethics*. Tianjin: Nankai University Press.

Chen, H.H. & Jia, S.H. (2004). Empirical Analysis of Three-Dimensional Classification of Enterprise Stakeholders. *Economic Research*, (4), 80-90.

Chen, R.Y. et al. (2006). *Corporate Ethics - A Value Concept*. Beijing: Science Press.

Chen, J. W. (2017). Analysis of Conflicts of Interest and Balance Mechanism among Internal Stakeholders in Enterprises. *Operator*, 31(8).

Chen, Y. (2012). *Research on the Relationship between Service Quality and Customer Satisfaction and Customer Loyalty in Large-scale Supermarkets--Taking Zibo City as an Example*. Doctoral Dissertation, Shandong University of Technology.

Chesbrough, H. & Rosenbloom, R.S. (2001). The Role of the Business Model in Capturing Value from Innovation: Evidence from Xerox Corporation's Technology Spinoff Companies. *Industrial and Corporate Change*, 11(3), 529-555.

Chesbrough, H. & Rosenbloom, R.S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, 11(3), 529-555.

Chesbrough, H. & Rosenbloom, R.S. (2002). The role of the business model in capturing value from innovation: evidence from Xerox corporation's technology spin-off companies. *Industrial and Corporation Change*, 11(3), 529-555.

Churchill, G. A. & Surprenant, C. (2003). An investigation into the determinants of customer

satisfaction. *Tourism Analysis*, 8(2), 193-196.

Clarkson, M.B.E. (1995). A Stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 20(1), 121-134.

Crosby LA., Evans K.R., & Cowles D. (1990). Relationship Quality in Services Selling: An Interpersonal Influence Perspective. *Journal of Marketing*, 54(3), 68-81.

Davis, K. & Blomston, R. L. (1966). *Business and Environment*. New York: Mac Graw Hill.

Doney, P. M. & Cannon, J. P. (1997). An Examination of the Nature of Trust in Buyer-seller Relationships. *Journal of Marketing*, 61(2):35-51.

Fang, Z.Y. (2014). *Business model innovation strategy*. Tsinghua: University Press.

Frederick W.C. (1988). *Business and Society, Corporate Strategy, Public Policy, Ethics(6th)*. McGraw-Hill: Book Co.

Freeman (2006). *Strategic Management: Stakeholder Approach*. Shanghai: Translation Publishing House.

Fu, J. Z., Lei, J. X., & Cheng.Y. (2003). Frontier issues in technical economics. *Beijing: Economic Science Press*.

Fynes B., Voss C, & Burca S.D. (2005). The Impact of Supply Chain Relationship Quality on Quality Performance. *International Journal of Production Economics*, 96(3), 339-354.

Gao, W. & Guan, X. (2015). Research on the Implementation and Evolution Mechanism of Enterprise Business Model Innovation——Based on Value Chain Perspective. *Reform and Strategy*, 57-60.

Graves, S. B. & Waddock, S. A. (1997). Finding the Link Between Stakeholder Relations and Quality of Management. *Journal of Investing*, 6(4).

Gu, W.T., Han Y.Q., & Guo B.G. (2005). Multi-level Grey Evaluation Model of Enterprise Ethics Ability. *Statistics & Decision*, (12), 11-13.

Guan, J. (2006). *Theoretical and empirical analysis of the factors affecting the success of China's small and medium-sized listed companies*. Doctoral Dissertation, Central South University.

Guo, H., & Shen, R. (2012). Research on the Influence of Environmental Inclusion and Uncertainty on Enterprise Business Model Innovation. *Economy and Management*, 2012(10): 97-104.

Guo, Y. F., & Zhao, X. K. (2012). Research on Business Model Innovation and Development Prospects. *Regional Economic Review*, 96-98.

Hamel, G. (2003). Innovation as a Deep Capability. *Leader to Leader, Winter, January*, 27(1), 19-24.

Heskett, J. L., Jones, T. O., & Loveman, G. W. (1994). Putting the Service-Profit Chain to Work. *Harvard Business Review*, 72(2):164-170

Heskett, J. L., Jones, T. O., & Loveman, G. W. (1994). Putting the Service-Profit Chain to Work. *Harvard Business Review*, 72(2):164-170

Holmlund M. (2001). The D&D Model: Dimensions and Domains of Relationship Quality

- Perceptions. *Service Industries Journal*, 21(3), 13-36.
- Homburg, C. & Pflesser, C. (2000). A Multiple-layer Model of Market-oriented Organizational Culture: Measurement Issues and Performance Outcomes. *Journal of Marketing Research*, 37(4):449-462.
- Hsiu-Fen Chen. (2013). Measuring perceived EC ethics using a transaction-process-based approach: Scale development and validation. *Electronic Commerce Research and Applications*, (7), 213 – 221.
- Hu, W., & Chen, J. N. (2003). An Empirical Study on Job Satisfaction of Mental Workers. *Science Research Management*, 24(4):139-144.
- Huang, T.C., Wu, B.T., & Yao W. (2002), Multi-level fuzzy evaluation model of customer satisfaction and its application. *Journal of Systems Management*, 11(4), 336-339.
- Huang, X. & Wang, J.G. (1996). Corporate Ethics: Definition, Type and Remodeling. *World Economic Papers*, (4), 47-51.
- Huang, L.H.(2013) Strategic thinking of the cost structure of business models's Manager network 9 (5)
- Ji, H.S., Lu, Q., & Wang, H.W. (2010). Design of Internet-based Business Model Based on Value. *Beijing University of Posts and Telecommunications (Social Science Edition)* , (6), 48-54.
- John, T. & Bruce S. (2006). Business Ethics Index: Measuring Consumer Sentiments toward Business Ethical Practices. *Journal of Business Ethics*, 64, 317-326.
- Johnso, M.W., Christensen, C.M., & Kagermann. H. (2008). Reinventing Your Business Model. *Harvard Business Review*, (9), 51-59.
- Kong, Y.Q., & Xu, J.F. (2006). Research on Enterprise Ethical Capability Evaluation Based on Grey Clustering. *Journal of Jiangsu University of Science and Technology (Social Science Edition)*, (03).
- Kotter, J. P., Heskett, J. L., Zeng, Z., & Li, X. T. translation. (1997). *Corporate culture and business performance*. United States: Huaxia Publishing House.
- Lenovo Group. (2014). *Lenovo Group Co., Ltd. 2013/2014 Annual Report*. Beijing, Lenovo Group.
- Li, H. (2011). *Comparative Analysis of Business Model Innovation of Chinese and American Internet Enterprises*. Doctoral Dissertation, University of Chinese Academy of Sciences (School of Economics and Management).
- Li, J. (1994). The Theory of Enterprise Lun. *Journal of Shaanxi Normal University (Philosophy and Social Sciences Edition)*, (4).
- Li, D. N. (2016). *Research on the relationship between brand competitiveness and customer satisfaction of e-commerce website*. Doctoral Dissertation , China University of Geosciences (Beijing).
- Li, F. & Liu, Y. (2011). Dynamic Evolution and Empirical Research of China's Advanced Manufacturing Model in Global Value Networks. *Journal of Beijing Jiaotong University (Social Science Edition)*, 2011(1): 49-54.

- Li, H. (2011). *Comparative Analysis of Business Model Innovation of Chinese and American Internet Enterprises*. Doctoral Dissertation, University of Chinese Academy of Sciences (School of Economics and Management).
- Li, H., Zhang, D., Cao, X. Y., & Zhang, X. Y. (2006). Empirical Study on the Effectiveness of EVA Performance Evaluation Indicators—Based on Data of 454 Listed Companies in Shanghai Stock Exchange in 2004. *Chinese Soft Science*, 2006(10):150-157.
- Li, J. H., Chen, H., & Zhang, J. C. (2003). Review of the Conceptual Model of Customer Satisfaction in Service Industry. *Journal of Hebei University of Technology*, 32(5), 53-58.
- Li, M. (2007). A Brief Discussion on the Construction of Business Model Innovation and Its Evaluation Index System. *Modern Economic-Journal of Tianjin University of Finance and Economics*, 27(2), 55-59.
- Li, W. A., & Tang, Y. J. (2005). Governance Mechanism, Governance Index and Enterprise Performance of Listed Companies' Stakeholders. *Management World*, 2005(9): 127-136.
- Li, Z. Y. (2009). *Business Logic: A Guide to Successful Business Model Design*. Beijing: China Water Resources and Hydropower Press.
- Liljander, Veronica., Strandvik., & Tore. (1995). *The Nature of Customer Relationships in Services*. London: JAI Press Inc.
- Linder, J., & Cantrell, S. (2000). Changing Business Models: Surveying the Landscape. *Accenture Institute for Strategic Change*.
- Liu, R.H., & Yao, Z. (2005). A Review of Research on Relationship Quality. *Foreign Economics and Management*, 27(1), 27-23.
- Liu, X.F. (2006). *Research on the impact of “controversial business behavior”*
- Liu, G. Q. (2013). Analysis on the Innovation Path of Platform Enterprise Business Model. *Modern Economic Information*, 2013(18): 168-168.
- Liu, Y. F., & Zhang, D. (2012). *Analysis of the dynamic factors of business model innovation*, 65-65.
- Liu, J.H.(2006) *The latest bank service specifications and international general management standards and national mandatory provisions implementation manual*. Tianjin: Nankai University Press.
- Lumpkin G.T., & Dess G.G. (2001). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderation Role of Environment and Industry Life Cycle. *Journal of Business Venturing*, 16(5), 429-451.
- Magretta, J. (2002) Why Business Models Matter. *Harvard Business Review*, 80(5), 86-92.
- Makadok., & Richard. (2001). Toward a Synthesis of the Resource-Based and Dynamic-Capability Views of Rent Creation. *Strategic Management Journal*, 22(5), 387-402.
- Mitchell R.K., Agle B.R., & Wood D.J. (1997) Toward a theory of stakeholder identification and salience: Defining the principle of whom and what really counts. *Academy of Management Review*, 22(4), 853-886.
- Mitchell, D., & Coles, C. (2003). Gaining and extending industry leadership through continuing

- business model innovation. *The journal of business strategy*, 24(5), 15-21.
- Mitchell, D., & Coles, C. (2003). The Ultimate Competitive Advantage of Continuing Business Model Innovation. *The Journal of Business Strategy*, 15-21.
- Mo, Q. Y. (2005). *Research on the Influence of Supplier Relationship Function on BtoB Supplier Relationship Quality*. Master Thesis, Zhejiang University.
- Mohr, J., & Spekman, R. E. (1994). Characteristics of Partnership Success: Partnership Attributes, Communication Behavior, and Conflict Resolution Techniques. *Strategic Management Journal*, 15(2):135-152.
- Morgan R.M., & Hunt S.D. (1994). The Commitment-trust Theory of Relationship Marketing. *Journal of Marketing*, 58(3), 20-38.
- Morris, M., Schindehutte, M., & Allen, Jeffery. (2003). The Entrepreneur's Business Model: Toward a Unified Perspective. *Journal of Business Research*, 58(1), 726-7351.
- Oliver, R. L. (1999). Whence Consumer Loyalty. *Journal of Marketing*, 34(63), 33-44.
- Oliver, R. L. & Desarbo, W. S. (1988). Response Determinants in Satisfaction Judgments. *Journal of Consumer Research*, 14(4), 495-507.
- Oliver, R. L. & Richard, L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17(4), 460-469.
- Osterwalder, A. (2004). *The business model ontology-A proposition in a design science approach*. Doctoral Dissertation, Université de Lausanne.
- Osterwalder, A., & Iigneur, P. (2005). Christopher L. Tucci. Clarifying Business Models: Origins, Present and Future of the Concept. *Communications of the Information System*, 15(5), 1-25.
- Osterwalder, A. & Pigneur, Y. (2010). *Business model new generation*. Beijing: Mechanical Industry Press.
- Ouyang, R.P. (2000). *The Theory of Yili Symbiosis—A Study of Chinese Business Ethics*. Changsha: Hunan Education Press.
- Ouyang, R.P. (2003). Corporate Core Competence and Corporate Ethics Quality. *Ethics Research*, (005), 28-32.
- Ouyang, R. P. (2003). Corporate Ethics. China: Hunan People's Publishing House. perspective of corporate ethics. *Journal of Business Research*, 63(2), 255-262.
- Petrovic, O., Kittl, C., & Teksten, R. D. (2001). *Developing Business Models for Business*. In the Proceedings of the International Conference on Electronic Commerce: Vienna, Austria.
- Rochet, J. & Tirole, J. (2003). Platform competition in Two-sided Markets. *Journal of European Economic Association*, 1(4), 990-1029.
- Roman, S. (2007). The ethics of online retailing: a scale development and validation from the consumers' perspective. *Journal of Business Ethics*, (72), 131 — 148.
- Rust, R., Zeithaml, V., & Lemon, K. (2000). *Driving Customer Equity: How customer Lifetime Value is Reshaping Corporate Strategy*. Free Pr.
- Scott, W. R. (1992). *Organizations, Rational, Natural and Open Systems (3rd ed)*, Englewood

Cliffs, NJ: Prentice Hall.

Shafer, S. M., Smith, H. J., & Linder, J. C. (2005). The Power of Business Models. *Business Horizons*, 2005(48):199-207.

Shen, C. (2015). Research on the Relationship between Customer Satisfaction and Corporate Performance of China Unicom, *Business*, 2015(35):19-20.

Smith, J. & Brock. (1998). Buyer-Seller Relationships: Similarity, Relationship Managements and Quality. *Psychology & Marketing*, 15(1), 321.

Song, J. (2016). The era of network video charging is coming, the free mode is difficult to support. *China Economic Weekly*, 2016 (3): 60-61.

Song, X. D. & Li, T. (2002). Analysis of the Status Quo of Customer Satisfaction Index (CSI) Research and Improvement Measures. *Journal of Wuhan University of Technology*, 24(5): 115-117.

Sosna, M. & Nelly, R. (2010). Thevinyo-Rodriguez and Velamuri R. Business model innovation through trial-and-error learning- The Naturhouse Case. *Long Range Planning* 43, 383-407.

Stewart, D. W., & Zhao, Q. (2001). Internet Marketing, Business Models, and Public Policy. *Journal of Public Policy and Marketing*, 287-296.

Sun, T. Y. (2012). *An Empirical Study of the Impact of Stakeholders in Listed Companies on Corporate Performance*. Master Thesis, Shenyang Institute of Technology.

Svensson, G. (2008). A model of business ethics. *Journal of Business Ethics*, 73(3), 303-312.

Tankhiwale, S. (2009). Exploring the Interrelationship Between Telco Business Model Innovation and the Change in Business Process Architecture. *Journal of Telecommunications Management*, 2(2):126-137.

Tao, G. (1998). *Effects of Relationship Quality on Customer Perceived Value in Organizational Purchasing*. Virginia Tech.

Teng, L. (2010). *Quality of Key Stakeholder Relationships in SMEs \_ Steering Strategy and Turning Performance Research*. Master Thesis, Central South University.

Thomas & Russell. (2001) Business Value Analysis: Coping with Unruly Uncertainty. *Strategy & Leadership*, 29(2), 16-24.

Timmers, P. (1998). Business models for electronic markets. *Electronic Markets Journal*, 8(2), 3-8.

Tse, D. K. & Wilton, P. C. (1988). Models of Consumer Satisfaction Formation: An Extensive. *Journal of Marketing Research*, 25(2), 204-212.

Tucker, R. B. (2001). Strategy innovation takes imagination. *Journal of Business Strategy*, 22(3), 23-27.

Venkatraman, N. & Ramanujam, V. (1986). Measurement of Business Performance in Strategy Research: A Comparison of Approaches. *The Academy of Management Review*, 11(4).

Wan, J. H., Dai, Z. H., & Chen, J. (1998). *Stakeholder Management*. Haitian Publishing House.

Wang, Q. (2011). Enterprise Business Model Innovation Based on Value Network Reconstruction.

*China Industrial Economy*, (1), 79-88.

Wang, Y. Q. & Yan, H. R. (2000). Evaluation of Customer Satisfaction. *Economic Management*, 2000(8): 36-38.

Wei, F. X. (2003). An Empirical Study on the Relationship between Customer Perceived Service Quality and Customer Satisfaction. *Journal of Tianjin University of Commerce*, 23(1), 21-25.

Weng, J. X. (2004). *Business Model Innovation*. Beijing: Economic Management Press.

Wood, D. (1991). Corporate Social Performance Revisited. *Academy of Management Review*, 16:691-718.

Wu X.W. (1996). Foreign Enterprise Ethics: A Perspective of Thirty Years. *Foreign Social Sciences*, (3), 18.

Wu, M. L. (2009). *Structural Equation Model—Amos Operation and Application*. Chongqing: Chongqing University Press.

Xia, X. M. (2011). Research on Enterprise Ethics Evaluation Based on Stakeholder Perspective. *Economic System Reform*, 2011(6): 104-108.

Xiao, Y. T. (2004). *Stakeholders participate in corporate governance research - survey from 30 companies*. Master Thesis, Zhejiang University.

XIE, X. F., LI, J., & YU, Q. Y. (2008). How Can a Risk Be Increased? An Analysis of Risk Communication Channels . *Acta Psychologica Sinica*, 4.

Xie, P. H., Yan, H. M., Wei, N. J., & Liu, X. (2011). An Empirical Study on the Factors Affecting Customer Satisfaction in B2C E-commerce in China during the Transition Period. *Scientific Research Management*, 32(10):109-117

Xu, J. & Zhang, X, J. (2006). Preliminary Study on Platform Economics. *China Industrial Economy*, 40-47.

Yan. Z.C., Pan, W., Liang, J., & Lu, T.J. (2013). Research on Situation-aware Journey Planning System Based on Customer Satisfaction Model. *China Communications*, 10(6), 156-163.

Yi, Y., & Gong, T. (2009). An Integrated Model of Customer Social Exchange Relationship: The Moderation Role of Customer Experience. *The Service Industries Journal*, 29(11):1513-1528.

Yu, H.J. (2009). *Research on the quality, internal ability and growth performance of external network relationships of new ventures*. Doctoral Dissertation, Hangzhou.

Yuan, L. (2007). Reconstruction of business model system. *China's industrial econom*, 72-81.

Zeng, H., Wang, H.S., & Ge, Y.H. (2006). Evaluation Model of Enterprise Ethics Based on BP Neural Network. *Business Research*, (20).

Zhang, L. (2016). *Research on Sales Process Improvement for Customer Satisfaction Improvement*. Doctoral Dissertation, Jilin University.





## Webliography

- Baidu Encyclopedia. (2018, January 26). *Chinese Consumer Satisfaction Index*. Retrieved March 20, 2019, from <https://baike.baidu.com/item/%E4%B8%AD%E5%9B%BD%E9%A1%BE%E5%AE%A2%E6%BB%A1%E6%84%8F%E5%BA%A6%E6%8C%87%E6%95%B0>
- Cy315. (2018, January 5). *China Internet service industry market development scale and industry development trend analysis*. Retrieved March 20, 2019, from <http://www.chyxx.com/industry/201807/655285.html>, 2018-07-03/2018-10-04
- CY315. (2018). *China Internet service industry market development scale and industry development trend analysis*. Retrieved October 4, 2018, from <http://www.chyxx.com/industry/201807/655285.html>
- CY334. (2018, February, 2). *2017 global Internet industry market size and industry development situation analysis*. Retrieved October 4, 2018, from <http://www.chyxx.com/industry/201802/610690.html>
- Eutopia405. (2016, November, 27). *Landing strategy of Industry 4.0: One Internet, two themes and three contents*. Retrieved November 25, 2018, from <https://wenku.baidu.com/view/53375395690203d8ce2f0066f5335a8102d266bd.html>
- Liu shengqian. (2016, June, 26). *Former Baidu Employees: Many Baidu Principles Unknown to the Public*. Retrieved June 25, 2018, from <http://news.sohu.com/20160625/n456245843.shtml>
- Mouth. (2017, December, 26). *From "nonsense Tencent" to the horrible Tencent Empire*. Retrieved November 10, 2018, from [http://www.sohu.com/a/208796847\\_652416](http://www.sohu.com/a/208796847_652416)
- Penguin Zhikuo. (2017, April, 27). *2017 WeChat User & Ecology Research Report*. Retrieved December 9, 2018, from <http://b2b.toocle.com/detail--6394894.html>
- View industry. (2017, April, 16). *2016 WeChat Social and Economic Impact Research Report*. Retrieved February 15, 2018, from <http://www.askci.com/news/chanye/20170417/13435696128.shtml>
- Yao, J. F. (2018). *2017 China E-Commerce User Experience and Complaint Monitoring Report*. Retrieved October 4, 2018, from <https://baijiahao.baidu.com/s?id=1595991838618772496&wfr=spider&for=pc>
- Yicai. (2017, February, 24). *Baidu Financial Report*. Retrieved November 10, 2018, from <http://finance.sina.com.cn/roll/2017-02-24/doc-ifyavrsx4933110.shtml>
- Zhang, H. Y. (2018). *The 41st Statistical Report on Internet Development in China in 2018*[EB/OL]. Retrieved October 3, 2018, from <https://baijiahao.baidu.com/s?id=1591258144487675180&wfr=spider&for=pc,2018-02-02/2018-10-03>.



## Appendix

### Appendix 1 Customer Satisfaction Evaluation Questionnaire of Platform Enterprises (Questionnaire A)

Dear Mr./Ms.:

Hello! Thank you very much for taking the time to fill out the questionnaire.

This questionnaire is an anonymous questionnaire to evaluate customer satisfaction of Internet platform enterprises. It is hoped that the evaluation indicators that customers consider as the most important can be collected through this survey. Your answers will only be used for academic research. Please feel free to fill out the questionnaire! There is no correct or wrong answer. Please fill out according to your own real feelings. I am very grateful for your help!

Notes on filling out the questionnaire:

Platform enterprises, namely terminal Internet enterprises, create the platform services to attract both buyers and sellers, and set up reasonable service fees to gather buyers and sellers in the trading platform, such as **Baidu, Alibaba and Tencent**.

#### I. Personal information

1. What is your gender?

Male  Female

2. How old are you?

16-25  26-35  36-45  Above 45

3. How long have you used the Internet platform products?

Below 0.5 year  0.5-1 year  1-3 years  4-6 years  Above 7 years

#### II. Questionnaire maintext

Please select the four options that best judge the customer satisfaction dimension from each of the following groups based on your personal experience.

1. The four indicators that best evaluate the enterprise image are:

- Brand image
- Enterprise legal compliance
- Enterprise integrity
- Enterprise communication with the public
- Enterprise charity performance
- Enterprise focus on customers
- Employee image
- Partner image

2. The four indicators that best evaluate the enterprise service quality are:

- Employee (customer service) service attitude
- Employee (customer service) service capability
- Rationality of service hours
- Customer feedback response timeliness
- Convenience of feedback channels
- Service customization
- Communication with customers
- Diversity of communication channels

3. The four indicators that best evaluate the perceived product quality of customers are:

- Product satisfaction
- Product demand response timeliness
- Product reliability
- Consistency between product and expectations
- Product operation convenience
- Product system stability
- Product information diversity
- Product novelty
- Product attractiveness

4. The two indicators that best evaluate the overall enterprise satisfaction are:

- Evaluation of overall enterprise service quality
- Evaluation of overall enterprise product quality
- Reliance on enterprise
- Overall satisfaction with enterprise

5. The two indicators that best evaluate the customer loyalty are:

- Repeated usage/purchase willingness
- Willingness to recommend to others
- Reliance on enterprise and its products
- Willingness to try new products
- Possibility of bearing charges/price increases

6. In addition to the above indicators, what other factors do you think will affect your satisfaction

with an enterprise?

Thank you again for your support! Thanks!

## Appendix 2 Customer Satisfaction Measurement Scale of Internet Platform Enterprises (Questionnaire B)

Dear Mr./Ms.:

Hello! Thank you very much for taking the time to fill out the questionnaire.

This questionnaire is about the research on the customers' satisfaction with the products/services of Internet platform enterprises, and targeted at Baidu, Alibaba, Tencent and Sina. This questionnaire is anonymous. Your answers will only be used for academic research. Please feel free to fill out the questionnaire! There is no correct or wrong answer. Please fill out according to your own real feelings. I am very grateful for your help!

### I. Personal information

1. What is your gender?

Male  Female

2. How old are you?

16-25  26-35  36-45  Above 45

3. Please select from below the platform enterprise/product which you are the most familiar with

Baidu (Baidu search)  Alibaba (Taobao)  Tencent (WeChat)  Sina (Weibo)

4. How often do you use the product of the enterprise?

Very frequently  Frequently  Occasionally  Unless necessary

5. How long have you been using the product of the enterprise?

Below 0.5 year  0.5-1 year  1-3 years  4-6 years  Above 7 years

### II. Questionnaire maintext

Please select the option which you agree with the most according to your personal overall perception of the enterprise.

The following questions mainly measure your satisfaction with the enterprise. Please mark the number which you agree with the most by “√” according to your personal overall perception. “1” means very disagree, “7” means very agree.	Very disagree	Disagree	Mostly disagree	General	Mostly agree	Agree	Very agree
<b>D1 Enterprise image</b>							
The enterprise has good image	1	2	3	4	5	6	7
The enterprise has good credit	1	2	3	4	5	6	7
The enterprise has a strong sense of public services	1	2	3	4	5	6	7
The enterprise pays high attention to customers	1	2	3	4	5	6	7
<b>D2 Perceived service quality</b>							
The employees (customer services) of the enterprise have good service attitude	1	2	3	4	5	6	7
The enterprise responds to and handles customer feedback quickly	1	2	3	4	5	6	7
The enterprise provides customized services	1	2	3	4	5	6	7
You are overall satisfied with the service quality of the enterprise	1	2	3	4	5	6	7
<b>D3 Perceived product quality</b>							
The product quality of the enterprise meets your expectations	1	2	3	4	5	6	7
The product of the enterprise meets your needs very well	1	2	3	4	5	6	7
The product of the enterprise is highly safe	1	2	3	4	5	6	7
The product of the enterprise is attractive	1	2	3	4	5	6	7
You are overall satisfied with the product quality of the enterprise	1	2	3	4	5	6	7

<b>D4 Customer complaints</b>							
You think the enterprise is good and has nothing to complain about	1	2	3	4	5	6	7
<b>D5 Customer loyalty</b>							
You are willing to repeatedly use/purchase the product/service of the enterprise	1	2	3	4	5	6	7
You are willing to recommend others to use/purchase the product/service of the enterprise	1	2	3	4	5	6	7

This is the end of this questionnaire! Thank you again for your support! Thanks!

Appendix 3 Questionnaire on the Influence of Business Model Innovation of Internet Platform Enterprises on the Relationship Quality of Stakeholders and Enterprise Performance (Questionnaire C)

Dear Mr./Ms.:

Hello! Thank you very much for taking the time to fill out the questionnaire.

This questionnaire aims to understand the influence of business model innovation of Internet platform enterprises on the relationship quality of stakeholders and enterprise economic performance. This questionnaire is anonymous. Your answers will only be used for academic research. Please feel free to fill out the questionnaire! There is no correct or wrong answer. Please fill out according to your own real feelings. I am very grateful for your help!

I. Background information

1. What is your gender?

Male  Female

2. How old are you?

16-25  26-35  36-45  Above 45

3. What is your highest education degree?

Middle school and below  High school  Junior college  Undergraduate  Master  PhD and above

4. How long have you been working in the Internet industry?

Below 1 year  1-5 years  6-10 years  11-15 years  Above 16 years

5. Please select from below the platform enterprise which you are the most familiar with

Baidu  Alibaba  Tencent  Sina

## II. Questionnaire maintext

Please select the option which you agree with the most according to your personal overall perception of the enterprise.

### A. Business model innovation of enterprises.

The following questions mainly measure the business model innovation of enterprises. Please mark the number which you agree with the most by “√” according to your personal overall perception. “1” means very disagree, “7” means very agree.	Very disagree	Disagree	Mostly disagree	General	Mostly agree	Agree	Very agree
<b>A1 Value proposition innovation</b>							
The market positioning of the enterprise is very accurate	1	2	3	4	5	6	7
The business model of the enterprise is novel overall	1	2	3	4	5	6	7
Customers know what values the enterprise creates for them	1	2	3	4	5	6	7
<b>A2 Value network innovation</b>							
The enterprise arranges its business processes rationally and ensure quick platform information flow	1	2	3	4	5	6	7
The enterprise provides diversified and differentiated products and services for customers	1	2	3	4	5	6	7



The enterprise possesses massive valid information, and can respond to market changes and customer demands in a timely, accurate and quick manner	1	2	3	4	5	6	7
The enterprise adopts diverse marketing methods	1	2	3	4	5	6	7
<b>A3 Value maintenance innovation</b>							
The enterprise maintains stable relationships with stakeholders and coordinates with them well	1	2	3	4	5	6	7
The enterprise keeps introducing diversified partners	1	2	3	4	5	6	7
The business model of the enterprise is not easily reproducible	1	2	3	4	5	6	7
<b>A4 Value realization innovation</b>							
The enterprise has multiple revenue sources	1	2	3	4	5	6	7
The enterprise optimizes its cost structure and reduces the platform costs	1	2	3	4	5	6	7
The enterprise has launched financing and investment activities recently, and produced abundant benefits and remarkable effects	1	2	3	4	5	6	7

B. Enterprise ethics.

The following questions mainly measure the enterprise ethics. Please mark the number which you agree with the most by “√” according to your personal overall perception. “1” means very disagree, “7” means very agree.	<b>Ver y dis agr ee</b>	<b>Dis agr ee</b>	<b>Mo stly dis agr ee</b>	<b>Ge ner al</b>	<b>Mo stly agr ee</b>	<b>Ag ree</b>	<b>Ver y agr ee</b>
<b>B1 Ethics for employees</b>							
The salary and benefits of the enterprise are highly competitive in local region or industry	1	2	3	4	5	6	7
The working hours of the employees are rational	1	2	3	4	5	6	7
The enterprise values employee training	1	2	3	4	5	6	7

The enterprise provides fair employment and promotion opportunities, and does not coerce the employees	1	2	3	4	5	6	7
<b>B2 Ethics for external stakeholders</b>							
The enterprise provides high-quality, safe and reliable products and services for its customers at reasonable charges	1	2	3	4	5	6	7
The enterprise provides authentic and reliable information for its customers	1	2	3	4	5	6	7
The enterprise protects user privacy	1	2	3	4	5	6	7
The enterprise has never performed any malicious marketing activities	1	2	3	4	5	6	7
The enterprise competes with its competitors in an open, fair and untwisted manner	1	2	3	4	5	6	7
The enterprise provides technical and service support for its partners	1	2	3	4	5	6	7
The enterprise protects the intellectual property rights	1	2	3	4	5	6	7
<b>B3 Ethics for public stakeholders</b>							
The enterprise abides by the laws and never evades the payment of legal taxes	1	2	3	4	5	6	7
The enterprise actively supports and participates in charity activities	1	2	3	4	5	6	7
The enterprise actively formulates and implements energy-conservation and environmental-protection planning	1	2	3	4	5	6	7
The enterprise actively promotes the local employment and the community economic development	1	2	3	4	5	6	7
The enterprise actively undertakes and timely restores the social and environmental damages	1	2	3	4	5	6	7

C. Relationship quality of stakeholders

The following questions mainly measure the enterprise's relationship quality with stakeholders. Please mark the number which you agree with the most by "√" according to your personal overall perception. "1" means very disagree, "7" means very agree.	Ver y dis agr ee	Dis agr ee	M os tl y di sa gr ee	Ge ner al	Mo stly agr ee	Ag ree	Ver y agr ee
<b>C1 Relationship quality of employees</b>							
The employees are satisfied with the working environment and salary	1	2	3	4	5	6	7
The employees believe that the enterprise has good development prospects	1	2	3	4	5	6	7
The employees recognize the concept and organizational culture of the enterprise	1	2	3	4	5	6	7
The enterprise is willing to invest more time and resources in its relationship with employees	1	2	3	4	5	6	7
The employees are willing to sacrifice their short-term interest to help the enterprise out of difficulties or crisis	1	2	3	4	5	6	7
The employees can participate in the decision-making of the enterprise	1	2	3	4	5	6	7
The enterprise values the suggestions proposed by the employees	1	2	3	4	5	6	7
<b>C2 Relationship quality of external stakeholders</b>							
No fraudulent behavior has ever emerged	1	2	3	4	5	6	7
The external stakeholders trust the products and services provided by the enterprise	1	2	3	4	5	6	7
The enterprise is willing to invest more time and resources in its relationship with external stakeholders	1	2	3	4	5	6	7
The enterprise considers the interest of external	1	2	3	4	5	6	7

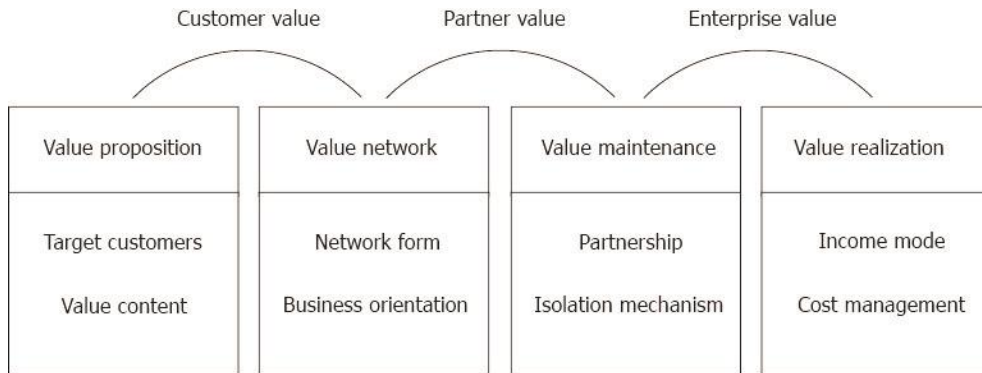
stakeholders in making important decisions							
The products and services provided by the enterprise are not easily replaced	1	2	3	4	5	6	7
The enterprise is highly dependent on the external stakeholders	1	2	3	4	5	6	7
<b>C3 Relationship quality with public stakeholders</b>							
The public believes that the enterprise can operate in compliance with the laws	1	2	3	4	5	6	7
The public believes that the enterprise has good development prospects	1	2	3	4	5	6	7
The enterprise has access to community and governmental resources	1	2	3	4	5	6	7
The enterprise is closely connected with the public and the government	1	2	3	4	5	6	7
The enterprise values the evaluation of the public	1	2	3	4	5	6	7
The enterprise has participates in the related working meetings or forums by the community, the industry and the government	1	2	3	4	5	6	7

D. Economic performance (filled out by the enterprise employees)

The following questions mainly measure the economic performance of the enterprise. Please mark the number which you agree with the most by “√” according to your personal overall perception. “1” means very low, “7” means very high.	Very low	Low	Relatively low	General	Relatively high	High	Very high
<b>D1 Profitability (Total operating revenue and net profit rate)</b>	1	2	3	4	5	6	7
<b>D2 Market share</b>	1	2	3	4	5	6	7

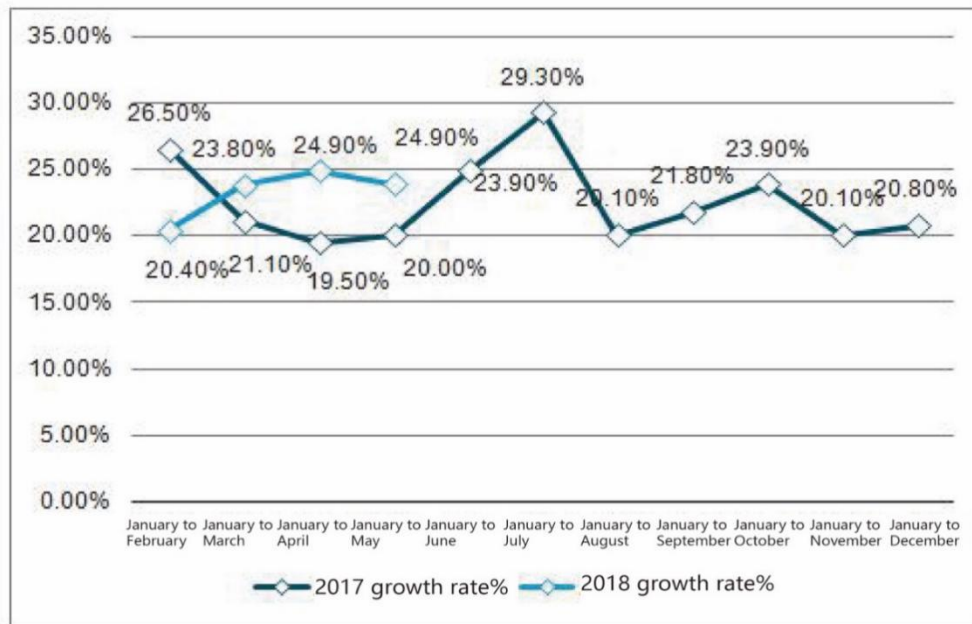
<b>D3 Growth of active users</b>	1	2	3	4	5	6	7
----------------------------------	---	---	---	---	---	---	---

This is the end of the questionnaire! Thank you! Hope you successful career and prosperous enterprise!



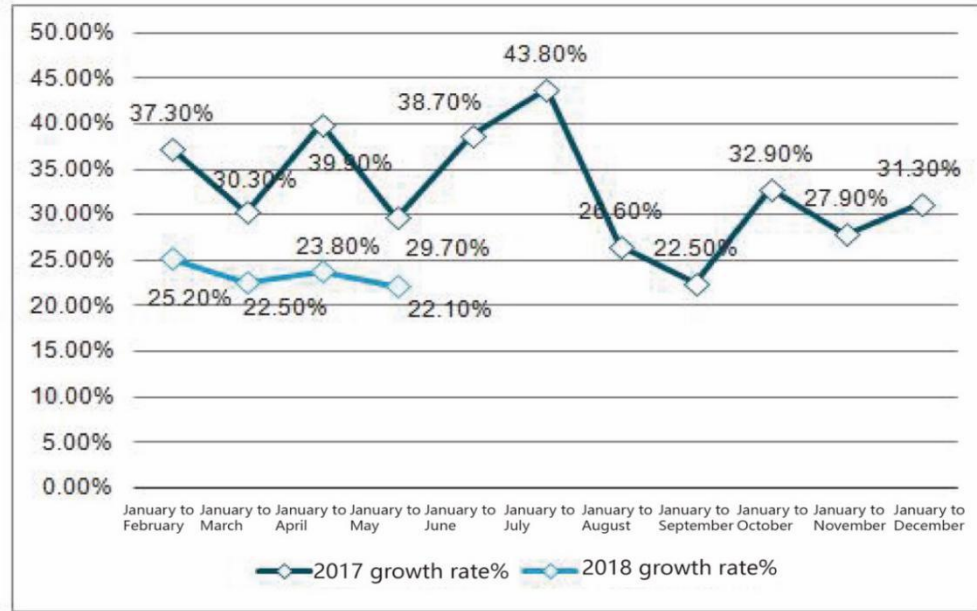
Appendix 4 “3-4-8” composition system of the business model proposed by Yuan Lei

Source: Yuan (2007)



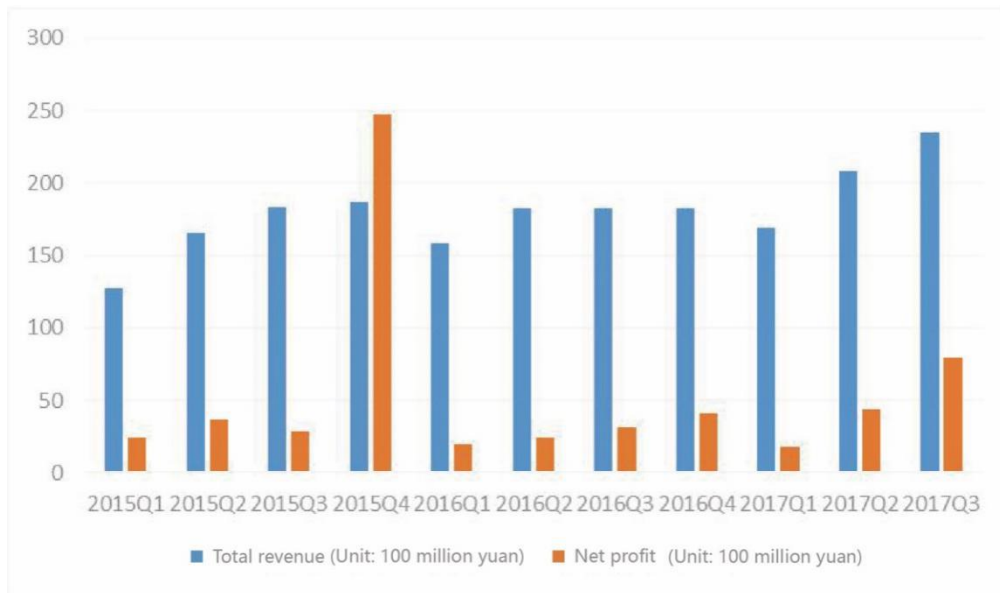
Appendix 5 Business Revenue of the Chinese Internet from 2017 to 2018

Source: <http://www.chyxx.com/industry/201807/655285.html>, 2018-07-03/2018-10-04



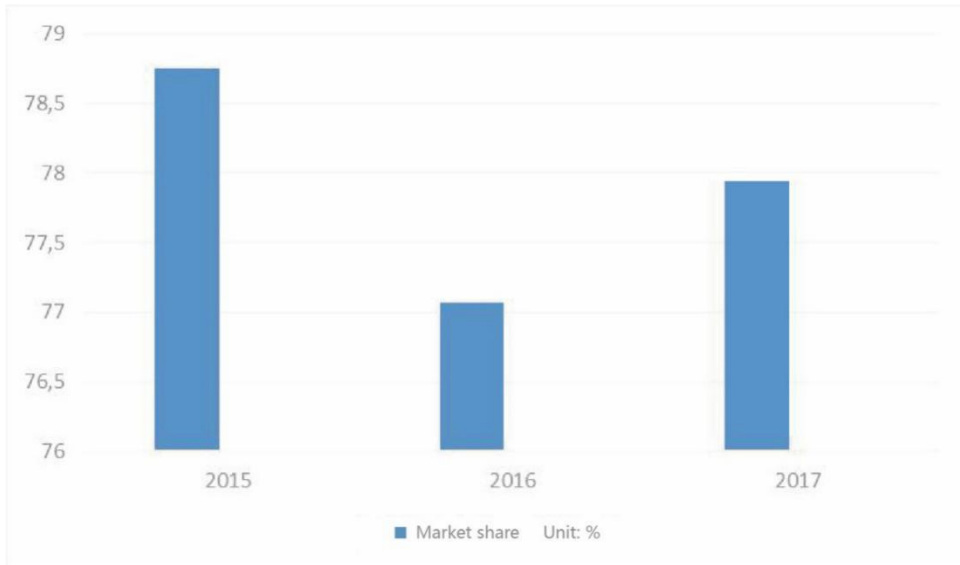
Appendix 6 Growth of Chinese Information Service Revenue from 2017 to 2018

Source: <http://www.chyxx.com/industry/201807/655285.html>, 2018-07-03/2018-10-04



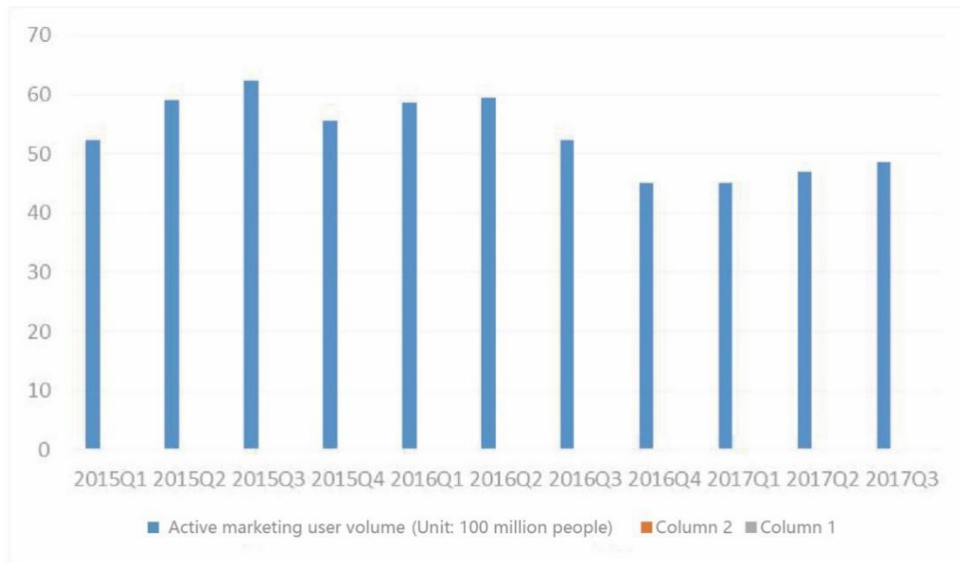
Appendix 7 Operating Revenue and Net Profit of Baidu from 2015Q1 to 2017Q3

Source: Baidu Financial Report (2015-2017)



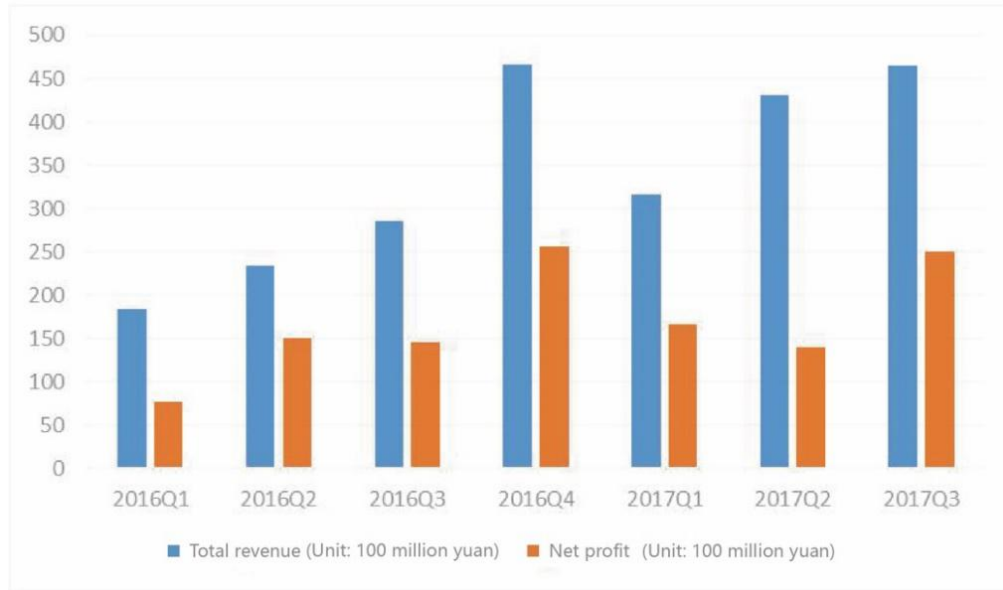
Appendix 8 Market Share of Baidu Search from 2015 to 2017

Source: <http://www.maigoo.com/news/490503.html>



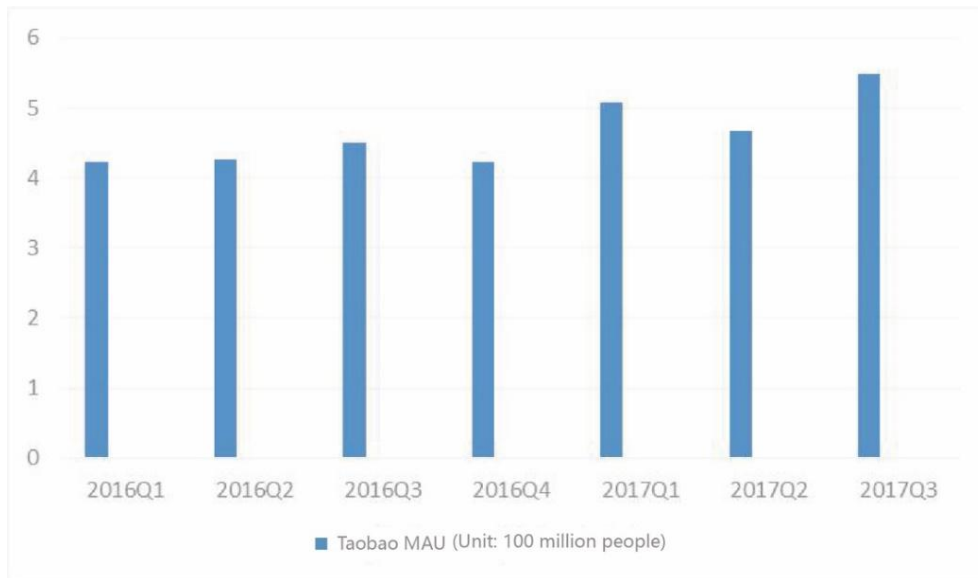
Appendix 9 Active Marketing Users of Baidu Search from 2015 to 2017

Source: Baidu Financial Report (2015-2017)



Appendix 10 2016Q1 to 2017Q, Alibaba E-commerce Operating Income and Net Profit

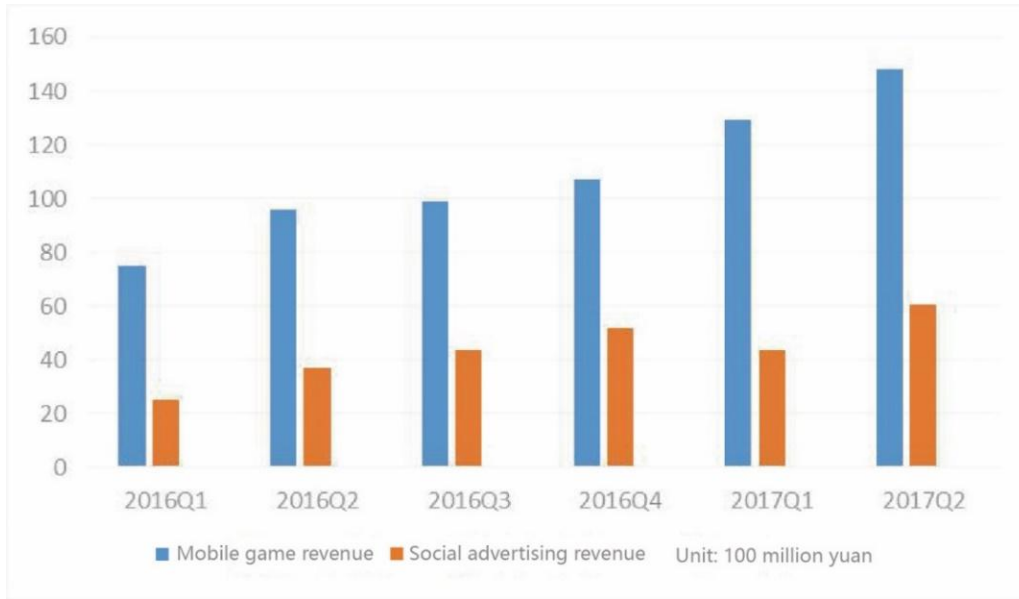
Source: Alibaba Group Financial Report (2016-2017)



Appendix 11 Monthly Active Users of Core E-commerce of Alibaba from 2016Q1 to 2017Q3

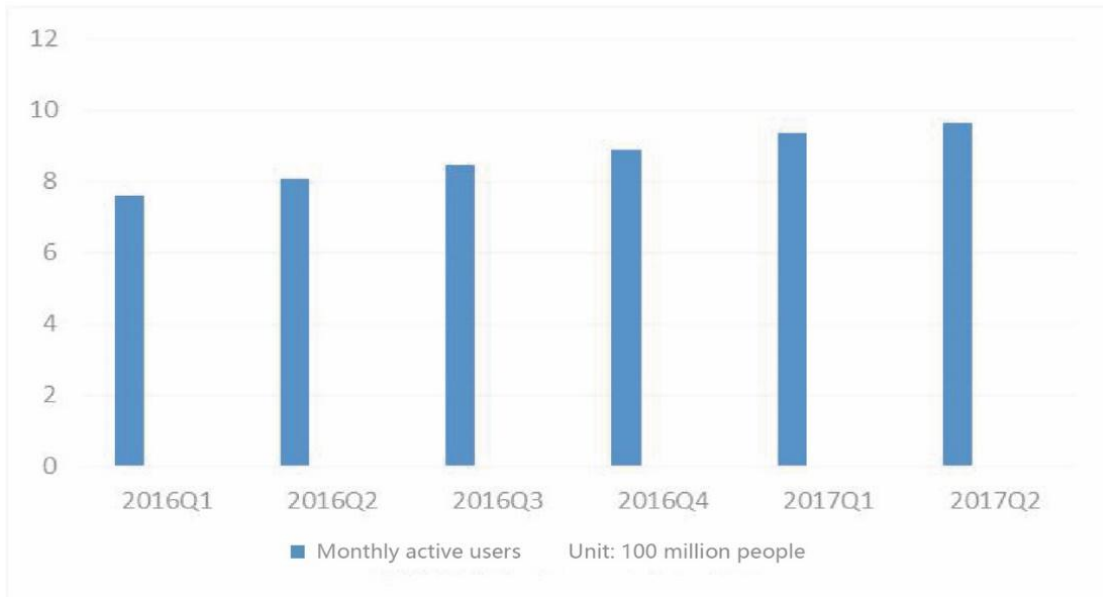
Source: Alibaba Group Financial Report (2016-2017)





Appendix 12 Operating Revenue of WeChat from 2016 to 2017

Source: Tencent Financial Report (2016-2017)



Appendix 13 Monthly Active Users of WeChat from 2016 to 2017

Source: Tencent Financial Report (2016-2017)

Appendix 14 Key Fields of Internet + Sharing Economy in China (Transaction volume: EUR 13 million)

Field	Transaction volume	Representative platform
Financing	20863	Lufax, CreditEase, Renrendai, Jingdong Equity Crowdfunding, Zhongchou
Living services	7233	58 Daojia, eDaijia, iDachu, Gfxiong, Helijia
Producing	3380	Alibaba TGC, Yikexue, 15 Intelligent Platform of Shenyang Machine Tool Plant
Transportation	2038	Didi, Yongche, START, UU, AA Pinche
Knowledge and skills	610	ZBJ, Zaihang, Zhihu, Fenda, Zuodao
Housing and accommodation	243	Xiaozu, Tujia, Mayi
Medical services	155	Guahao, Haodf, Ping'An Health Cloud, We Doctor

Source: China Sharing Economy Development Report (2017)

Appendix 15 2017 China Comprehensive Retail E-commerce Complaint

Platform product	Industry	Proportion of complaints	Platform feedback rate	Feedback time efficiency
Suning	Comprehensive	6.06%	99.74%	95.67%
Pinduoduo	Comprehensive	14.56%	96.30%	95.94%
Vipshop	Comprehensive	6.16%	97.75%	65.05%
Jingdong	Comprehensive	14.53%	95.34%	57.93%
iShansong	Comprehensive	1.32%	80.23%	100%
Amazon	Comprehensive	1.95%	72.44%	56.52%

Fanli	Comprehensive	1.63%	74.52%	81.01%
Gome	Comprehensive	2.75%	81.00%	28.27%
Dangdang	Comprehensive	2.27%	2.02%	66.66%
Taobao/Tmall	Comprehensive	16.21%	0	0

Source: www.100ec.cn

Appendix 16 2017 China Living Service E-commerce-OTA Complaint

Platform product	Industry	Proportion of complaints	Platform feedback rate	Feedback time efficiency
Ctrip	Online travel agency	8.16%	25.66%	89.66%
Tuniu	Online travel agency	0.51%	0	0
Mafengwo	Online travel agency	0.82%	0	0
Tongcheng Tourism	Online travel agency	0.93%	0	0
eLong	Online travel agency	1.30%	0	0
Fliggy	Online travel agency	17.47%	0	0
Qunar	Online travel agency	18.48%	0	0

Source: www.100ec.cn

Appendix 17 Analysis of Basic Characteristics of Relevant Industrial Practitioners for details.

Category	Statistical item	Number of samples	Percentage (%)	Total
Gender	Male	119	51.5	231
	Female	112	48.5	
Age	16-25	89	38.5	231
	26-35	86	37.2	
	36-45	43	18.6	
	46 and older	13	5.7	
Academic background	High school and below	3	1.3	231
	College	20	8.7	
	Undergraduate	168	72.7	
	Graduate	33	14.3	
	PhD and above	7	3	
Work experience in Internet industry	1 year and below	35	15.2	231
	1-5 years	90	39	
	6-10 years	96	41.6	
	11-15 years	6	2.6	
	16 years and above	4	1.6	

Appendix 18 Analysis of Basic Characteristics of Surveyed Customers.

Category	Statistical item	Number of samples	Percentage (%)	Total
Gender	Male	112	46.1	243
	Female	131	53.9	
Age	16-25	142	58.4	243
	26-35	59	24.3	
	36-45	24	9.9	
	46 and older	8	7.4	
Use time of platform Internet products	Below 0.5 years	0	0	243
	0.5-1 year	7	2.9	
	1-3 years	32	13.2	
	4-6 years	58	23.9	
	Over 7 years	146	60	

Appendix 19 KMO Test and Bartlett Test

a. KMO test and Bartlett test of business model innovation scale

Sampling of sufficient Kaiser-Meyer-Olkin measure		0.860
Barlett spherical test	Approximate chi-square	1341.253
	Df	78
	Sig.	0.000

b. Factor analysis results of business model innovation scale

Questions	Commonality	Load coefficient	Eigenvalue	Explained variance
Enterprise proposition innovation 1	0.792	0.842		
Enterprise proposition innovation 2	0.595	0.692	1.062	16.454%
Enterprise proposition innovation 3	0.522	0.596		
Value network innovation 1	0.707	0.764		
Value network innovation 2	0.648	0.681	5.528	20.044%
Value network innovation 3	0.769	0.836		
Value network innovation 4	0.568	0.575		
Value maintenance innovation 1	0.751	0.743		
Value maintenance innovation 2	0.670	0.721	1.281	16.950%
Value maintenance innovation 3	0.772	0.838		
Value realization innovation 1	0.719	0.738		
Value realization innovation 2	0.641	0.691	1.012	14.879%
Value realization innovation 3	0.729	0.808		

c. KMO test and Bartlett test of enterprise ethics scale

Sampling of sufficient Kaiser-Meyer-Olkin measure		0.918
Barlett spherical test	Approximate chi-square	3096.275
	Df	120
	Sig.	0.000

d. Factor analysis results of enterprise ethics scale

Questions	Commonality	Load coefficient	Eigenvalue	Explained variance
Ethics for employees 1	0.742	0.858	1.18	19.182%
Ethics for employees 2	0.779	0.877		

Ethics for employees 3	0.798	0.876		
Ethics for employees 4	0.763	0.870		
Ethics for external stakeholders 1	0.790	0.826		
Ethics for external stakeholders 2	0.751	0.819		
Ethics for external stakeholders 3	0.696	0.754		
Ethics for external stakeholders 4	0.703	0.751	7.763	31.815%
Ethics for external stakeholders 5	0.792	0.851		
Ethics for external stakeholders 6	0.757	0.784		
Ethics for external stakeholders 7	0.710	0.768		
Ethics for public stakeholders 1	0.792	0.797		
Ethics for public stakeholders 2	0.699	0.772		
Ethics for public stakeholders 3	0.786	0.808	3.008	23.696%
Ethics for public stakeholders 4	0.702	0.760		
Ethics for public stakeholders 5	0.691	0.736		

e. KMO test and Bartlett test of relationship quality of stakeholders' scale

Sampling of sufficient Kaiser-Meyer-Olkin measure		0.948
Barlett spherical test	Approximate chi-square	3174.924
	Df	171
	Sig.	0.000

f. Factor analysis results of relationship quality of stakeholders' scale

Questions	Commonality	Load coefficient	Eigenvalue	Explained variance
Relationship quality of employees 1	0.635	0.582		
Relationship quality of employees 2	0.663	0.652	1.054	21.748%
Relationship quality of employees 3	0.680	0.730		
Relationship quality of employees 4	0.696	0.787		

Relationship quality of employees 5	0.540	0.591		
Relationship quality of employees 6	0.663	0.648		
Relationship quality of employees 7	0.601	0.648		
Relationship quality of external stakeholders 1	0.677	0.714		
Relationship quality of external stakeholders 2	0.647	0.671		
Relationship quality of external stakeholders 3	0.713	0.755		
Relationship quality of external stakeholders 4	0.652	0.710	1.229	21.935%
Relationship quality of external stakeholders 5	0.671	0.699		
Relationship quality of external stakeholders 6	0.662	0.746		
Relationship quality of public stakeholders 1	0.661	0.719		
Relationship quality of public stakeholders 2	0.643	0.689		
Relationship quality of public stakeholders 3	0.688	0.730		
Relationship quality of public stakeholders 4	0.605	0.638	10.211	22.076%
Relationship quality of public stakeholders 5	0.663	0.699		
Relationship quality of public stakeholders 6	0.735	0.778		



g. KMO test and Bartlett test of customer satisfaction scale

Sampling of sufficient Kaiser-Meyer-Olkin measure		0.861
Barlett spherical test	Approximate chi-square	1440.475
	Df	120
	Sig.	0.000

h. Factor analysis results of customer satisfaction scale

Questions	Commonality	Load coefficient	Eigenvalue	Explained variance	Questions
Enterprise image 1	1.000	0.716	0.765	1.656	14.452%
Enterprise image 2	1.000	0.657	0.744		
Enterprise image 3	1.000	0.450	0.505		
Enterprise image 4	1.000	0.700	0.603		
Perceived service quality 1	1.000	0.617	0.760	1.158	14.348%
Perceived service quality 2	1.000	0.587	0.693		
Perceived service quality 3	1.000	0.599	0.707		
Perceived service quality 4	1.000	0.538	0.596		
Perceived product quality 2	1.000	0.664	0.710	5.676	19.958%
Perceived product quality 3	1.000	0.658	0.755		
Perceived product quality 4	1.000	0.666	0.750		
Perceived product quality 5	1.000	0.607	0.717		
Perceived product quality 1	1.000	0.703	0.731		
Customer complaints	1.000	0.823	0.874	1.003	6.898%
Customer loyalty 1	1.000	0.772	0.801	1.078	10.441%
Customer loyalty 2	1.000	0.814	0.810		

i. KMO test and Bartlett test of economic performance scale

Sampling of sufficient Kaiser-Meyer-Olkin measure		0.707
Barlett spherical test	Approximate chi-square	266.534
	Df	3
	Sig.	0.000

j. Factor analysis results of economic performance scale

Questions	Commonality	Load coefficient	Eigenvalue	Explained variance
Profitability	0.755	0.869		
Market share	0.678	0.823	2.204	73.47%
Growth of active users	0.772	0.878		

Appendix 20 Correlation Analysis and Bartlett Test

a. Correlation analysis between relationship quality of stakeholders and customer satisfaction

		Customer satisfaction	Relationship quality of employees	Relationship quality of external stakeholders	Relationship quality of public stakeholders
Customer satisfaction	Pearson correlation	1	.544**	.509**	.516**
	Significance (double-tail)		.000	.000	.000
	Number of cases	249	249	249	249
Relationship quality of employees	Pearson correlation	.544**	1	.747**	.757**
	Significance (double-tail)	.000		.000	.000
	Number of cases	249	249	249	249

Relationship quality of external stakeholders	Pearson correlation	.509**	.747**	1	.698**
	Significance (double-tail)	.000	.000		.000
	Number of cases	249	249	249	249
Relationship quality of public stakeholders	Pearson correlation	.516**	.757**	.698**	1
	Significance (double-tail)	.000	.000	.000	
	Number of cases	249	249	249	249

b. Regression analysis results between relationship quality of stakeholders and customer satisfaction

Model	Unstandardized coefficient		Standardized coefficient		t	Significance
	B	Standard deviation	Beta			
1 (Constant)	3.508	.200			17.540	.000
Relationship quality of employees	.176	.059	.272		3.009	.003
Relationship quality of external stakeholders	.106	.050	.174		2.115	.035
Relationship quality of public stakeholders	.117	.052	.189		2.250	.025
R	0.578					
R square	0.334					
Adjusted R square	0.326					
F	40.918***					

c. Correlation analysis between relationship quality of stakeholders and economic performance

		Economic performance	Relationship quality of employees	Relationship quality of external stakeholders	Relationship quality of public stakeholders
Economic performance	Pearson correlation	1	.846**	.790**	.781**
	Significance (double-tail)		.000	.000	.000
	Number of cases	249	249	249	249
Relationship quality of employees	Pearson correlation	.846**	1	.747**	.757**
	Significance (double-tail)	.000		.000	.000
	Number of cases	249	249	249	249
Relationship quality of external stakeholders	Pearson correlation	.790**	.747**	1	.698**
	Significance (double-tail)	.000	.000		.000
	Number of cases	249	249	249	249
Relationship quality of public stakeholders	Pearson correlation	.781**	.757**	.698**	1
	Significance (double-tail)	.000	.000	.000	
	Number of cases	249	249	249	249

d. Regression analysis results between relationship quality of stakeholders and economic performance

Model	Unstandardized coefficient	Standardized		t	Significance
		B	Beta		
1 (Constant)	-.040	.184	Beta	-.219	.827

Relationship quality of employees	.487	.054	.452	9.025	.000
Relationship quality of external stakeholders	.288	.046	.286	6.272	.000
Relationship quality of public stakeholders	.246	.048	.239	5.135	.000
R	0.892				
R square	0.795				
Adjusted R square	0.793				
F	316.971***				

e. Correlation analysis between customer satisfaction and economic performance

		Customer satisfaction	D1 Profitability	D2 Market share	D3 Growth of active users
Customer satisfaction	Pearson correlation	1	.460**	.507**	.508**
	Significance (double-tail)		.000	.000	.000
	Number of cases	249	249	249	249
D1 Profitability	Pearson correlation	.460**	1	.556**	.669**
	Significance (double-tail)	.000		.000	.000
	Number of cases	249	249	249	249
D2 Market share	Pearson correlation	.507**	.556**	1	.578**
	Significance (double-tail)	.000	.000		.000
	Number of cases	249	249	249	249

D3	Pearson	.508**	.669**	.578**	1
Growth of active users	correlation				
	Significance (double-tail)	.000	.000	.000	
	Number of cases	249	249	249	249

Appendix 21 Definitions of Enterprise Ethics

Author (Year)	Detailed description
Lewis (1985)	Enterprise ethics primarily provides rules, norms, standards, or principles, and serves as a guide for enterprises and their employees in different specific contexts
Svensson (2008)	Enterprise ethics should include the ethical contents of all the stakeholders from the perspective of stakeholders
Webster Dictionary (Merriam-Webster) (Ninth Edition)	Enterprise ethics as a discipline that explores what is good or bad and discusses moral responsibility and obligation
Huang Xian and Wang Jiangang (1996)	Enterprise ethics refers to the ethical and moral standards upheld by enterprise funders, legal institutions, agents, ordinary employees, and business supervision institutions in dealing with their mutual relationships, and the ethical judgment on whether the enterprises will undertake certain responsibilities and obligations to society and nature
Li Jian (1994)	Enterprise ethics should include all the moral phenomena in the enterprises, which are the sum of moral consciousness, moral norms and moral activities in the enterprises. The three organically constitute the ethics of enterprises, and are dynamically unified

<p>Ouyang Runping (2005)</p>	<p>Enterprise ethics mainly refers to the sum of ethical relations, ethical awareness, ethical norms and ethical activities in enterprise production and operation. These four factors constitute the overall structure of enterprise ethics, and present a cyclical state of mutual influences and connections</p>
----------------------------------	---

Appendix 22 The Classification of the Customer Satisfaction

Customer satisfaction as a process		Customer satisfaction as a psychological state	
Scholar	Definition of customer satisfaction	Scholar	Definition of customer satisfaction
Harward (1969)	Customer satisfaction is the result of customers comparing cost with the benefits that they expect to receive from a product or service.	Folks (1984)	Customer satisfaction is an instant emotional expression of the value which customers attribute to the product or service under certain circumstances.
Wirtz & Miller (1977)	Customer satisfaction is generated by the customer comparing the expected performance with the perceived performance of a product or service.	Oliver (1990)	Customer satisfaction is the psychological feeling of customers, and the customer's judgment on the product characteristics or the satisfaction of the consumption experience, including very satisfied, satisfied and dissatisfied.

Churchill (1982)	Customer satisfaction is the result of a purchase based on the customer comparing the costs of the product purchase and the benefits from product use, and includes cost-benefit analysis.	Bolton & Drew (1991)	Customer satisfaction is the customer emotion based on integration of all consumption experiences, and is likely to affect the evaluation of product (service) quality, consumption and behavioral intentions.
Bearden & Teel (1983)	Customer satisfaction is the customers like or dislike for a product or service after they experience the consumption, and the overall attitude of customers based on cumulative experience.	Philip Kotler (2001)	Customer satisfaction is a function of the difference between perceived utility and expectation, and is a psychological state.
Cadotte & Woodruff (1987)	Customer satisfaction is customer satisfaction after customers compare the forgotten purchase experience with the actual perceived purchase experience.		
Johnson & Fornell (1991)	Customer satisfaction is a comprehensive evaluation of all purchase experiences of products or services, and shows the past, present and future performance of the enterprise.		
Engel & Blackwell (1993)	Customer satisfaction is the judgment result of the customers on whether there is a strong consistency between the expectation before purchase and the actual experience after		



purchase.

Appendix 23 Design of Measurement on Relationship Quality of Stakeholders-Employees

Dimension	Measurement indicator	Source
Satisfaction	Employees are satisfied with the working environment and style of their enterprises, and can obtain a sense of achievement from work	Hu Bei (2003)
	Employees consider that their salaries match their workload	
Trust	Most employees believe that the enterprises have great development prospects	Teng Lin (2010)
	Employees reach widespread consensus with the enterprises in terms of values, enterprise concept and organizational culture	
Commitment	When the enterprises encounter difficulties or crises, employees can sacrifice their short-term interests to help the enterprise	Guan Jian (2011)
	The enterprises are willing to invest more time and resources in their relationship with employees	
Governance participation	Employees play an important role in the decision-making of the enterprises	Xiao Yuantao (2004)
	The enterprises value the suggestions and opinions of employees	

Appendix 24 Design of Measurement on Relationship Quality of Stakeholders-External Stakeholders.

Dimension	Measurement indicator	Source
Trust	There is no fraudulent behavior in the past	Doney & Cannon (1997)
	The external stakeholders believe in the quality of products or services provided by the enterprises	Mo Qingyun (2005)
Commitment	The enterprises are willing to invest more time and resources in the relationship with external stakeholders	Anderson & Witz (1992)
	The enterprises consider the interests of external stakeholders in making important decisions	
Communication	The communication quality is high in terms of accuracy, timeliness, adequacy and reliability	Mohr & Spekman (1994)
	Both parties have many information sharing channels	
Dependence	It is difficult to substitute products or services provided by the enterprises	Caniels (2007)
	The enterprises are highly dependent on external stakeholders	