Executive DBA, Paris Dauphine University

A Research of the Effects of CEO’s Managerial Cognition on the Strategic Choice of Pharmaceutical Enterprises-- the Case of Four Pharmaceutical Enterprises in China

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ABSTRACT

The pharmaceutical industry has been called “a sunrise industry that never fades” and become one of the fastest-growing industries in China over the past decade. This industry, besides the solid growth, is also undergoing a fundamental change in pharmaceutical industry policy and regulatory mechanisms. Meanwhile, with the in-depth implementation of the innovation-driven development strategy in the new economic situation, China's pharmaceutical companies with relatively weak innovation capability are faced with pressure from strategic transformation. How to quickly adapt to changes in key policies and the environment, especially to the institutional environment, has become a critical factor regarding enterprise survival and the formation of competitive advantages.

Being strategic leaders, CEOs play a very important role in how to identify and use environmental changes, as well as in selecting strategies which are matched with external environment and internal conditions. Based on the core thought of cognitive school of strategic management, this paper takes the bounded rationality of pharmaceutical enterprises’ CEOs as the start point, studies influence of CEO’s managerial cognition on pharmaceutical companies’ strategic choice and performance via strategic leadership theory, upper echelons theory and managerial cognition theory. In this study, qualitative case study is taken as the guide, four pharmaceutical enterprises are taken as samples, explanation building analysis method is mainly used, and logic models and cross-case analysis are used as assistant analysis. Following the theoretical logic of “personality characteristics→ managerial cognition→ policy making→ strategic choice→ organizational performance→ managerial cognition”, the paper, using the deductive and analysis method, explores how CEO managerial cognition influences the strategic choice and strategic performance of pharmaceutical enterprises. This research adopts case study method to analyze how CEO personality characteristics influence the knowledge structure of managerial cognition, and enterprises’ strategic choice and performance. The author verifies the theoretical stand proposed in the paper through collecting, statistics and analysis of the information, and explains the relationship between concepts, phenomena found in individual cases and the reasons through verification or falsification of the hypothesis. Case study method suits EDBA. First, the author puts forward holistic inquiry into cases based on experience and comes up with inductive conclusions. Second, the author believes that multiple case study offers solid theoretic foundation and universal application.

This study adopts multiple case study method, and four pharmaceutical enterprises are taken as samples to conduct within-case analysis and cross-case analysis. Data sources include field note, archives, interviews, observation, participant observation and evidences. Being mutual complement and corroboration, various sources serve as triangulation, thus promote the validity and reliability of conclusions. Last, since case study is a kind of empirical social study, the author employs validity, internal validity, external validity and reliability to
evaluate the preciseness of case study.

After in-depth discussion and cross-case study of the track of the four sample enterprises’ strategic changes, the study establishes the theoretical framework of how CEO personality characteristics influence enterprise strategic choice and performance. The core research and findings include:

Firstly, CEO managerial cognition has a vital role in selecting strategic choice and achieving strategic performance. In the dynamic environment, CEO is bounded rational and hardly be fully aware of the external environment or get completed expectation of others’ behaviours, thus the section of strategic choice and achievement of strategic performance rely on CEO managerial cognition, which limits CEOs’ searching and understanding of their environment, accordingly influences enterprises’ strategic behaviours rather than the environment itself.

Secondly, CEO personality characteristics influencing strategic choice and performance via managerial cognition has been put forward and verified. Bounded rational CEO can only perceive a limited portion in the face of a mass of potential information in the external environment, and give special explanation to the perceived information. The perception process is influenced both by CEO psychology characteristics and observed experience. CEO personality characteristics, namely need of achievement, locus of control, risk propensity, narcissism propensity and openness of experience, influence managers’ vision, selection and interpretation of information, thus have an effect on managerial cognition, and even the strategic choice and performance.

Thirdly, different CEO personal characteristics have different influences on strategic choice. CEOs with tendency of internal control, high level of risk propensity, narcissism propensity and openness of experience prefer to prospector strategy; tendency of internal control has greater influence on strategic choice. CEOs with tendency of external control prefer to defender strategy. CEOs with tendency of internal control, high level of risk propensity, narcissism propensity or openness of experience probably choose analyser strategy. Meanwhile, tendency of internal control, higher need of achievement, risk propensity, narcissism propensity and openness of experience promote enterprises’ strategic performance, especially the higher need of achievement, which influences strategic performance greatly and contributes to the improvement of strategic performance.

This study facilitates general enterprises, CEOs and scholars to better understand the strategic leader role of CEOs and their managerial cognition; helps pharmaceutical enterprises to better learn about CEO personality characteristics’ effects on strategic choice and performance, thus raising awareness of enterprises to the appointment and cultivation of CEOs and offering suggestions on appointment and cultivation of CEOs, and further study as well. At last, the author explains methodology applied in the study, and points out its characteristics and advantages over the traditional ones. Moreover, the author presents the shortcomings and defects of such methodology, especially uncontrollable conditions. The author admits shortcomings of this study, and hopes to conduct further research with other scholars and researchers.
Keywords: pharmaceutical companies; managerial cognition; CEO personality characteristics; strategic choice; strategic performance
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I would like to extend the sincere gratitude to my supervisor, Prof. Jing Run-tian. The admiring profound erudition, rigorous approach to scholarly research, commitment to excellence inspire me constantly. The treasure of teaching with tireless zeal, and always being gentle and affable affect me deeply. These valuable characteristics of my supervisor give me strength in my lifelong journey to be a better me.

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Chapter I Introduction

1.1 Background and significance

Medicine industry is one of the 15 international industries divided according to international standards. It is called "a sunrise industry that never fades". Since reform and opening up, China's economy has achieved remarkably rapid development. China's medicine industry flourished accordingly. In 2013, the total cost of medicine and health in China reached CNY 3,166.15 billion, which is 42.36 times as much as that of 1990, accounting for 5.57% of GDP of the same year. Pharmaceutical industry is considered to be the most promising high-tech sector in the 21st century. It is featured by high investment, high additional value and high risk. Over the past decade, the annual output of China's pharmaceutical industry grew by 18.8% on average and the annual profit growth rate reached 22.1%. The pharmaceutical industry has become one of the fastest-growing industries in China. This development pace is also higher than that of major drug making counties in the developed countries. In the future, China's pharmaceutical market will maintain a solid growth pace under the combined effect of aging population, urbanization, wealth accumulation, the government's commitment in increasing spending on health care and a series of other factors. China's pharmaceutical industry, including raw materials, generic drugs and health products, has great potential for development.

This industry, besides the solid growth, is also undergoing a fundamental change. The new medicine and health system reform (hereinafter referred to as the new medicine and health reform) launched in April of 2009 introduced a series of measures, such as low drug price and expanding coverage of health insurance, which had a profound and significant impact on the pharmaceutical market and also brought changes to the competition pattern in the same market. As a matter of factor, the national pharmaceutical industry and regulatory policies are moving forward under adjustment period currently. Good Manufacture Practice of Drugs (2010) (new GMP certification for drugs), Provisions for Drug Registration and related policies are frequently enacted, which makes the policy environment facing by pharmaceutical enterprises constantly changing. Every policy adjustment may result in the change of the pattern of interests. Thus, pharmaceutical enterprises which are highly sensitive to macro policies need to pay close attention to policies and adjust their strategic direction in good time. On the other hand, from a global perspective, China's pharmaceutical industry is still at the low end of the global value chain. Although China has surpassed India and become the largest exporter of API (active pharmaceutical ingredients) and pharmaceutical intermediates in the world, the profit is low because API is a kind of low-end product at the expense of a lot of resources and environmental pollution. In addition, 97% of the products of the biomedical industry in China are generic drugs. Although the output is not minor, they are
basically products with low profit of which the patent has expired. Thus, the raise of raw materials, labor and land costs, increasingly stringent environmental standards and policy changes in the medical industry have posed a challenge to the survival and development of some pharmaceutical companies. By the end of 2013, enterprises above designated size in China's pharmaceutical manufacturing industry have reached 6,525, of which 646 enterprises suffer from losses. The loss rate of the industry was 9.90%, increasing by 0.6% comparing to 2012. Many pharmaceutical companies faced the risk of bankruptcy or bankruptcy reorganization. With the rapid change in the environment and the launch of a variety of key policies, it can be expected that the development of pharmaceutical companies cannot be smooth. How to quickly adapt to changes in the environment, especially to the institutional environment, has become a critical factor regarding enterprise survival and the formation of competitive advantages.

Strategy is the response of enterprises to changes in the external environment. It reflects the degree of fit of the external environment, internal structures and processes, and is essential for the survival and development of enterprises. In the study of strategic decision-making, "what is the role of the decision maker" has been the focus of the debate. External cybernetics thinks that the external environment limits the space for the development of enterprises and makes opportunities and threats to enterprises through environmental changes, available resources, government regulation and technology upgrades, thus determining strategies enterprises can take. However, behavioral theorists and psychologists believe that although it is important to recognize the importance of the environment, human being, rather than other entities, is the one who finally makes the decision in enterprises. As an important link connecting external information and organizational decision making, the role of decision makers cannot be underestimated. In fact, different decision makers make significantly different strategies even facing the same environmental changes, which is difficult to explain with environmental factors. Thus, a large number of scholars began to shift their research interest to the internal of the organization and studied the influence of senior managers and other decision makers on the strategic decision-making of the enterprise.

Upper echelons theory of Hambrick and Mason (1984) explained the mechanism that decision makers influencing strategic decision-making. The theory believes that organizational strategy is the result of the combined effect of the environment and decision makers, nature of the environment and the causal relationship among various key strategic factors is clear and changes slowly in the stable environment, problems the organization faces are structured which can be solved through procedures, organizational systems and work processes, and decision makers have little impact on strategies. However, in the environment of high uncertainty, problems the organization faces are mostly unstructured, which cannot be solved by simply imitating or using the old method, and new measures should be made according to its interpretation and judgment to the environment. Thus, decision makers will have great influence on strategic decision making of the enterprise in the uncertainty environment. Strategic leadership theory, which is based on the upper echelons theory, believes that experiences, values and personality characteristics of strategic leaders of the organization
(CEO and all senior managers directly report to CEO) which can be observed will influence their awareness and interpretation of strategic incentives (for example, the environment), and then influence the strategic choices and strategic performance.

Currently, China's pharmaceutical companies are in the relatively uncertain environment, and pharmaceutical industry policy and regulatory mechanisms are still in an adjustment phase. Meanwhile, with the in-depth implementation of the innovation-driven development strategy in the new economic situation, China's pharmaceutical companies with relatively weak innovation capability are faced with pressure from strategic transformation. Strategic leaders play a very important role in how to identify and use environmental changes, as well as in selecting strategies which are matched with external environment and internal conditions. Strategic leaders of pharmaceutical enterprises which are highly sensitive to macro policies need to make quick responses and maintain good decision-making quality when faced with external environment changes, especially the institutional environment changes.

What characteristics of strategic leaders affect strategic performance of pharmaceutical enterprises? How do these characteristics affect their perception and interpretation of the environment and then result in entirely different strategic choices? How will these strategic choices affect enterprises' performance in the context of uncertain business environment caused by the transformation of medical reform system? Through the study of the above problems, mechanism of action between strategic leaders' characteristics and performance of pharmaceutical enterprises in the period of institutional transition can be found to have a better understanding of the relation among strategic leaders' characteristics, environment, strategy and performance in the pharmaceutical industry, thus applying strategic leadership theory, an universal theory which is rooted in the Western context, to the pharmaceutical industry under the background of the transformation of medical reform system.

1.2 Purpose of study

Taking China's pharmaceutical enterprises in the environment of medical system reform transformation as the research object, the paper explores and explains personality characteristics of strategic leaders of pharmaceutical enterprises and the theoretical framework for their impacts on strategic performance of enterprises. Strategic leaders the paper explores are mainly CEO of pharmaceutical enterprises since enterprises' strategic decisions are CEO-led and CEO often bears strategic management function in pharmaceutical enterprises. Case study method is mainly used in this study. This paper, through analysis of 4 pharmaceutical enterprises, reveals effects of managerial cognition of CEOs on strategic choice and performance. Specifically, this study follows the logic of "personality characteristics → managerial cognition → policy making → strategic choice → organizational performance → managerial cognition" to analyse how CEO personality characteristics affect the knowledge structure of managerial cognition, thus influencing strategic choice and strategic performance. The paper hopes to find out a group of variables which can reflect personality characteristics of strategic leaders of China's pharmaceutical enterprises in the pursuit process of strategic performance and strategic management. As a result, CEO of pharmaceutical enterprises can correctly handle the interaction between leaders and strategic
management of the organization and achieve the purpose of successful implementation of strategic management, building the competitiveness of enterprises and improving business performance. Meanwhile, the analysis provides the organization with theoretical support in selecting excellent CEO suitable for the environmental requirements of the organization. Specifically, the study objectives of the paper are as follows:

(1) Explore CEO personality characteristics affecting strategic performance of pharmaceutical enterprises;

(2) Explore the theoretical model for effect mechanism of CEO personality characteristics on strategic performance;

(3) Think deeply and give suggestions for selection and employment of pharmaceutical enterprise CEOs.

1.3 Structure of the paper and arrangement of the content

The paper is divided into five parts:

Chapter I is the introduction of the whole paper, which mainly describes the realistic background of the questions issued, the inadequacy of theories, questions to be resolved, target of the study and the study method. At last, the logical frame of the paper, technical route, specific study contents, the proposed innovation point and the potential contribution are stated.

Chapter II is a review of relevant literatures. In this chapter, relevant theories of strategic leader, upper echelons, managerial cognition and strategic choice are combed. A summary is made mainly around the relation between senior manager and strategic choice, strategic leaders' personality characteristics, connotation and effect of managerial cognition and its effect on strategic choice of enterprises and strategic choice. Some enlightenment has been got from this chapter, but some gaps are also found. The review of literatures is to provide the author with "theoretical sensitivity" and describes the position of the study in the academic field.

Chapter III is the core idea of this interpretive case study. Core research questions, theoretical framework and research hypotheses are proposed in this part. In this study, qualitative case study is taken as the guide, four pharmaceutical enterprises are taken as samples, explanation building analysis method is mainly used, and logic models and cross-case analysis are used as assistant analysis. For example, the author's theoretical stand (theoretical hypothesis) is that different personality characteristics of CEO of pharmaceutical enterprises will result in their different perceptions of the environment so that enterprises will make different strategic choices. The author, taking the defined proposition and hypothesis as the premise, explores effects of CEO managerial cognition on strategic choice and strategic performance of pharmaceutical enterprises using the deductive method. The author verifies the theoretical stand (theoretical hypothesis) proposed in the paper through collecting, statistics and analysis of the information, and explains the relationship between concepts, phenomena found in individual cases and the reasons through verification or falsification of the hypothesis.
Chapter IV is case analysis, including case analysis process, accordingly understanding and diagnoses, and internal case analysis findings. This study takes four cases as objects. The within-case analysis part presents basic information of sample companies and their CEOs, companies’ transformation process, relationships among CEO personality characteristic, managerial cognition and strategic choice in the process of transformation, to reveal how CEO personality characteristics affect managerial cognition in the process of strategic choice and performance of different sample enterprises, thus revealing the theoretical logic of CEO personality characteristics affecting enterprises’ strategic behaviors.

Chapter V is the cross-case analysis, mainly stating the common as well as unique findings and enlightenment, further revealing the correlation between CEO personality characteristics and different strategic choices.

Chapter VI is the conclusion and enlightenment. The conclusion and limitations are given, and suggestions on future studies are offered. This chapter firstly summarizes conclusions and potential contributions; then puts forward policy suggestions and practical managerial enlightenment, both from the perspectives of enterprise and CEOs, based on theoretical analysis and empirical research.
Chapter II A Review of Literatures

In the period of transitional economy, internal and external environment changes of enterprises change their resource dependence model and bring a great deal of uncertainty to them. In face of changes of environment, enterprises must constantly adjust organizational strategy to get dynamic matching between strategy and the environment, and may ultimately enhance business performance. How do enterprises make strategic choice in face of institutional transition? How does strategy interact with the environment to influence performance? More and more scholars have begun to study these subjects. Relevant theoretical perspectives, models and empirical results are explained in this chapter, with the purpose of reviewing the relevant literature foundation of the relation among senior manager, strategy, environment and performance.

2.1 Relevant theories of strategic choice

2.1.1 Connotation of strategic choice

With different research purposes or based on different perspectives, different researchers have some differences in the definition of the connotation of strategic choice. They are also different in terms of expression means. Besides strategic choice, common means of expression also contains strategic orientation, strategic pictures, strategic types, strategic directions, etc.

"Strategic choice" originated from the attention of scholars to strategies and actions taken by organizations with different structures to respond to different environments and effects of these strategies and actions on performance and long-term development of the organization. Most of these strategies and actions are related to the competition that enterprises face, and their effects on performance and long-term development of the organization often become the standards which are used to determine whether the strategic choice is appropriate. Child (1972) first proposes "strategic choice". According to him, strategic choice contains formal, informal, pending and already made management decisions as well as the market and competition decisions which are closely related to strategy. This study enables the organizational behavior shifts its research emphasis from structure determinism to focusing on capabilities and role of strategic leaders again.

According to Miles and Snow (1978), strategic choice is a management revision process of the organization carries out to organization structure or process in order to maintain or improve performance of the organization. Three questions need to be resolved in this process: first, the question about starting business, i.e., which particular product or service entrepreneurs can choose as their target market or market segment; second, the question about engineering, which refers to the process that create a kind of technology serves this field; third, the question about operating management, which means that how to reduce the uncertainty in
the internal of organization system or model to rationalize and stabilize those activities that can successfully solve the problem of innovation and engineering.

Combining the domestic and foreign research results, strategic choice can be defined as trends, expectations and tendencies managers perceived according to a pre-existing environment and resources and can provide strategic planning and implementation with guidance (Zhou Xiaodong, 2006). One of the basic assumptions of strategic choice is that a strategic choice should be adapted to specific environmental conditions to obtain a higher level of performance. Enterprises which achieve match between the environment and strategy will obtain high strategic performance. Otherwise, enterprises' development will be affected.

2.1.2 Types of strategic choice

Currently, the research school of strategic choice comprises strategic marketing school and strategic management school, which are respectively divided into different categories. The essential difference of these two schools is whether strategic choice is made taking the market environment, technical means and mode of production as the orientation or taking senior manager's decision on the development direction of enterprises.

Through continuous improvement and accumulation, scholars of strategic marketing school respectively put forward market orientation (customer orientation and competitor orientation), technology orientation, entrepreneurial orientation, etc. Although these classification methods of strategic choice can clearly find out the target of strategic choice, they do not well analyze specific methods and strategies and the degree they will get to. In contrast, strategic management school and other schools based on this school have broader influence.

Strategic management school originates from conceptualization classification of strategic choice of Miles and Snow (1978). It divides the strategy type into prospector, defender, analyzer and reactor according to different methods used to resolve the questions of starting business, engineering and operating management. This classification method fully emphasizes on guidance and effects of top management team characteristics of enterprises on the overall vision and direction. After Miles and Snow (1978), many scholars classified strategic choice. For example, Porter (1985) divided strategy into cost leadership strategy, differentiation strategy and focus strategy. Wissema, VanDerpol and Messer (1980) proposed that strategic choice can be divided into search strategy, expansion strategy, sustainable growth strategy, decline strategy, aggregation strategy, retrenchment strategy, etc. Pierre Berthon et al. (1999) divided strategic orientation into isolate type, following type, forming type and interaction type. Porter's classification method and Miles-Snow's classification method are the most influential strategic classification methods. Porter used recapitulative terms, which are more suitable for the research to large enterprises. Miles-Snow made ideal classification to strategy using measurable indicators, and so it is better than simple status classification and is conducive to predict. In addition, some empirical studies proved that this classification method has good adaptability in different countries. Miles-Snow's strategic choice classification is used as study model in the paper, and so his strategy classification is briefly described in the paper.
1. Defender strategy

Defender strategy has defensive behavior characteristics, such as cost reduction and seeking methods to improve efficiency in particular. They are suitable for stable and certain circumstances. They focus on productivity maximizing and relatively narrow single market segment. They stably provide a limited set of highly standardized products and services and emphasize operational efficiency and scale economy. Technical efficiency is the core of performance of such enterprises. Meanwhile, in order to prevent the penetration of competitors on the market segment, enterprises often need high investment to continuously sustain the leading position of their technology in the field. Enterprises choosing defender strategy emphasize operational efficiency and scale economy in production. They take low price and high quality as their competition means. They have comparatively mature business model and clear and controllable business procedure. Problems they deal with are mostly routine problems. They often rarely develop new products and new markets. Sometimes, they even ignore the changes in the overall industry environment and believe that they can be successful as long as they focus on the existing market and products.

Table 2-1 Characteristics of defender strategy

<table>
<thead>
<tr>
<th>Questions</th>
<th>Solutions</th>
<th>Risk and return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question about starting business</strong></td>
<td>How to maintain market share of products and have stable customers with stable and narrow existing products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Maintain and expand narrow and stable market of the existing products;</td>
<td>Enterprises will have sufficient market shares in the dominant market and strong competitive advantage. Once the dominant market changes dramatically, survival and development of the enterprise will be threatened.</td>
</tr>
<tr>
<td></td>
<td>2. Dominate the market through price war and quality service;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Do not pay attention to markets other than the dominant market;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Cautiously and gradually achieve market share growth through market penetration;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Development of new products must be associated with an existing product or service.</td>
<td></td>
</tr>
<tr>
<td>Question about technology and process</td>
<td>How to most effectively realize production or sale of products or services</td>
<td>1. Reduce cost and improve efficiency through technical transformation; 2. Develop core technology; 3. Expand the industry upstream and downstream to realize vertical integration.</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Question about management</td>
<td>How to ensure high efficiency of the organization through strict organization management.</td>
<td>1. Strict financial control and skilled technical operations; 2. Ensure long-term dominance in the field: constantly improve internal capability and take products and income as the criterion for reward; 3. Cost-oriented plan in advance; 4. Optimize the organizational structure through professional specialization; 5. Adopt centralized management to the vertical integration; 6. Simple cooperation and resolve conflicts through the system; 7. Measure organizational performance based on past data.</td>
</tr>
</tbody>
</table>

Source: Miles and Snow (1978)

2. Prospector strategy

Prospector strategy means that enterprises constantly look for new business opportunities, pay close attention to several market or products fields with large span, constantly pay close attention to the introduction of new ideas and new products and put forward comprehensive marketing and production programs through launch of new products and new product service technology. They lead rather than follow competitors. Enterprises choosing prospector strategy often provide newly created and not fully mature products and services. Their business models often change and business process is often not clear and uncontrollable. Problems they deal with are mostly sudden and special. This kind of enterprises constantly look for opportunities in the market, attach importance to the development of new products and new markets and make efforts to create new profit point with the first-mover advantage in
markets and products as the competitive weapon. Enterprises choosing prospector strategy have a keen insight to environment and are pioneers leading products and industry changes. Accordingly, they must bear the risk of innovation failure. Comparing to defender strategy, prospector strategy is usually not high in operational efficiency. It balances risk and compensates for its inefficiency with high profit margin obtained by innovation. See characteristics of prospector strategy in Table 2-2.

Table 2-2 characteristics of prospector strategy

<table>
<thead>
<tr>
<th>Questions</th>
<th>Solutions</th>
<th>Risk and return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question about starting business</strong></td>
<td>How to seize opportunities in the market to identify and develop new products and services</td>
<td>1. Constantly and boldly develop and occupy new markets; 2. Supervise a wide range of external environment conditions and important events; 3. Industry innovation; 4. Realize growth through development of products and markets; 5. Seek growth in urgent change and progress.</td>
</tr>
<tr>
<td><strong>Question about technology and process</strong></td>
<td>How to avoid long-term use of a single technology process</td>
<td>1. Adaptable and standard technologies; 2. Diversified technology; 3. Low conventional and mechanized degree; keep technologies in mind.</td>
</tr>
</tbody>
</table>
### Question about management

How to simplify and coordinate a variety of different methods of operation

1. Have marketing and research and development experts in the dominant field;
2. Diversified dominant fields;
3. In order to maintain a lasting dominant position, key leaders can be employed or promoted from the internal;
4. Develop comprehensive and question-oriented plan, and change accordingly with the implementation;
5. Tend to product mix with low division and low profession;
6. Decentralized management and flat information control system;
7. Adjust complex organizational structure and conflict through the centralist.

This kind of management system is suitable for maintaining flexibility and efficiency of the organization; but it is easy to reduce resource utilization or misuses resources.

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3. Analyzer strategy

Analyzer strategy falls in between defender strategy and prospector strategy and has characteristics of both strategies. Enterprises collect comprehensive data and consider solutions as far as possible. This strategy is suitable for dynamic and uncertain environment. It maintains flexibility to follow the changes in the environment and pays attention to development of new products and discover of market opportunities. This kind of enterprise holds onto the existing market to get stable earnings and prudently innovates at the same time. Unlike prospectors, analyzers are not that radical in terms of innovation. They often imitate and improve prospectors' early products in the existing market which has been confirmed by prospectors. Thus, comparing to prospectors, analyzers are lower in the marginal profit ratio obtained from new products, but they are higher in efficiency of operation. Meanwhile, analyzers only bear smaller risk in innovation. See characteristics of analyzer strategy in Table 2-3.

Source: Liu Xiang-dong (2012)
### Table 2-3 Characteristics of analyzer strategy

<table>
<thead>
<tr>
<th>Questions</th>
<th>Solutions</th>
<th>Risk and return</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question about starting business</strong></td>
<td>How to locate and develop new products market opportunities while maintaining the original products and customers</td>
<td>1. Combine two strategies: stability and change;</td>
</tr>
<tr>
<td></td>
<td>2. Most part of organization supervision is limited to marketing, and research and development is only involved in some fields;</td>
<td>2. Most part of organization supervision is limited to marketing, and research and</td>
</tr>
<tr>
<td></td>
<td>3. Realize growth through market penetration and product - market development.</td>
<td>development is only involved in some fields;</td>
</tr>
<tr>
<td></td>
<td>The risk will be minimized through a small quantity of research and development as well as imitation of products which obviously can succeed. However, they should always pay attention to balance between &quot;stability&quot; and &quot;change&quot;.</td>
<td></td>
</tr>
<tr>
<td><strong>Question about technology and process</strong></td>
<td>How to achieve efficiency of the stable part and flexibility of the change part in the field</td>
<td>1. Double technology cores (stability and change);</td>
</tr>
<tr>
<td></td>
<td>2. Adopt grouping operation in large scale;</td>
<td>2. Adopt grouping operation in large scale;</td>
</tr>
<tr>
<td></td>
<td>3. Moderate degree of technical specialization.</td>
<td>3. Moderate degree of technical specialization.</td>
</tr>
<tr>
<td></td>
<td>Double technology cores are suitable for the comprehensive situation of &quot;stability - change&quot;, but technology cannot be completely effective.</td>
<td>Double technology cores are suitable for the comprehensive situation of &quot;stability - change&quot;, but technology cannot be completely effective.</td>
</tr>
</tbody>
</table>
4. Reactor strategy

Enterprises choosing reactor strategy are lack of control to the external environment. This kind of enterprises is lack of ability to adapt to external competition and effective internal control function. Reactor has no systematic strategic design and organizational planning. In reactor organization, senior manager is often aware of changes and uncertainties of the environment, but they cannot effectively respond. This kind of organization is lack of a consistent link between strategy and structure and cannot directly compete with strong competitors. They often reduce their enterprise size to avoid being eliminated in the process of changes in the market. Most studies abandoned reactor due to measurement defects. In fact, a few organizations are truly willing to class themselves as reactors. Some scholars put this type in their research because they want to state that it really exists. However, the number of organization of this type is much less than the other three types. This type is directly removed in other studies.
2.2 Senior manager and strategic choice

2.2.1 Strategic choice under bounded rationality

Senior managers are often faced with many uncertainties, especially in their strategic choice. There are many stimulating factors influencing strategic choice. Mischel (1977) believed that it cannot predict the choice of decision makers only through the study of stimulating factors, because the choice of decision makers will be totally different in such a "weak situation". Carnegie decision school believed that complexity level is the result of the limitations and biases of decision makers as human being to a large extent, rather than the result of rational analysis based on complete information. Therefore, to this school, decision makers often act according to what they know, what they perceive and what they want. In the face of the same objective environment, different managers will make different decisions based on their personal experiences and values.

Bounded rationality is an important characteristic of decision makers. Why do decision makers can only perceive a limited portion in the face of a mass of potential information, and give special explanation to the information they perceived and give different weights to the possible different results? Finkelstein etc. (2009) pointed out that most strategic behavior models only contain situation, choice and performance and ignore limitations and biases of decision makers as human being. However, in fact, the strategic choice process is the perception process of decision makers. This perception process contains a series of steps. First of all, manager cannot scan every aspect of the organization and the environment. Managers' vision, i.e., what decision makers will see and listen, determines that the field decision makers pay attention to is limited. Secondly, the individual's limited vision makes them only perceive a part of the content, i.e., what they actually see and listen. At last, decision makers explain the selected information they perceived based on their filtering to cognition basis and values, i.e., what kind of meaning they give to what they see and listen. This filtering process is also influenced by "orientation" of decision makers. "Orientation" is the basis for decision makers to explain strategic situation and decide behavioral pattern, which is influenced by values, cognition model and personality characteristics of decision makers.

2.2.2 Strategic leadership theory

Finkelstein et al. (2009) called leadership study based on strategic choice view strategic leadership theory. Strategic leadership theory is generated under the background of transition of traditional leadership study. Traditional leadership theory focuses on leadership in organization, which is micro leadership of the organization. However, strategic leadership theory emphasizes leadership of organization, which is macro leadership of the organization. Ireland and Hitt (1999) defined strategic leader as the individual who has the ability to predict the future, proposes the vision, keeps flexible and strategic thinking and cooperate with others advocating for change, creating a bright future for the organization. Hambrick (1989) believed that strategic leader appears in the vague and complex environment with overloaded information because the environment of the organization has become extremely unrest. These studies believed that senior manager has full responsibility for the organization, and
characteristics, behavior and behavioral pattern of senior manager will influence results of the organization.

Over the past 20 years, scholars paid great attention to how strategic leaders influence the overall performance of enterprises. With regard to the question why some enterprises run better than other enterprises, Ireland and Hitt (1999) believed that one of the answers is the degree of implementation of strategic leadership in enterprises. Different from the early strategic management scholars who focused on organizational environment, process, structure, strategy combination and dynamics of competition, strategic leadership theory emphasizes senior manager who is responsible for the overall performance of the organization, including chairman, general manager, president or CEO, vice-general manager and members of the Board of Directors who participate in major decisions of the enterprise, which are called strategic leaders by scholars. Hambrick and Chen (1995), through collating literatures, found that researches often define strategic leader as CEO and all senior managers who directly reports to CEO.

Currently, three major theoretical schools have formed in strategic leadership theory. The first one is upper echelons theory which is based on bounded rationality of decision makers. This theory focuses on effects of senior management team of the organization on strategy, operation and performance of the organization, and believes that experience, value, personality and interaction of senior manager significantly influences their perception of the operation environment, thereby influencing their subsequent strategic choice and final results of the organization. The second one is "new leadership" pattern from the perspective of organizational behavior, or called new charismatic leadership theory. This theory is represented by transformational leadership and transactional leadership theory. It focuses on behavior complexity, cognitive complexity and flexibility of leaders. The last one is strategic leadership study from the perspective of strategic management theory. It studies how the leaders plan the future development blueprint for the organization from the strategic perspective of organizational development. It focuses on the importance of organizational vision and effects of the vision on organizational processes and results.

Although the studies have different conclusions with regard to effects of strategic leaders on organizational performance, most studies agree that strategic leaders play a key role in achieving a high level of performance for the organization. For example, a series of variance decomposition analysis study indicated that differences between CEOs can account for a large part of the difference between performance of enterprises. In addition, scholars found in the latest variance decomposition analysis study that effects of CEO on performance of enterprises are more significant: Mackey (2009) found that difference between CEOs can account for 29.2% of the performance difference between enterprises, and Quigley and Hambrick (2014) found that the effect of CEO becomes larger over time and can account for 25% of performance difference between enterprises on average after 1990. These evidences provide the further study with a solid foundation on how characteristics of CEO influence strategic choice and performance of enterprises.
2.2.3 Upper echelons theory

Bounded rationality is an important characteristic of decision makers. Hambrick and Mason (1984) innovated and proposed upper echelons theory based on bounded rationality of human being. Characteristics, strategic choice and organizational performance of senior manager are included in the study model of upper echelons theory to highlight the effect of characteristics of population statistics on cognitive pattern of managers and organizational performance. Its core idea is that senior manager will make highly personalized interpretation and choice to the organizational situation they face and their behavior reflects cognition, values, experience and other personality characteristics. Senior manager determines the formation of organizational strategy and influences behavior of other members in the organization. The research framework is as shown in Figure 2-1.

![Figure 2-1 Research framework of upper echelons theory](image)


In essence, upper echelons theory is a senior manager cognition theory, as shown in Fig.1. This theory considers strategic choice of the organization as an information screening process, which means that managers filter and screen information of the external environment, understand the reality through selective perception and interpretation and then make the final strategic choice. This information screening process is influenced by orientation of decision makers, that is, in the face of a complex situation far more beyond their comprehensive ability, decision makers make strategic analysis and orientation through their unique psychological mechanism (values, cognition model, cognition type and personality). Thus, it can be seen that senior managers with different psychological characteristics may have very different understanding even in the face of the same strategy situation. Different situations and characteristics of managers result in different strategic choice and strategic choice will ultimately influence organizational performance. With regard to the relation between senior manager and organizational result, the latter reflects the former and the former can effectively predict and explain changes of the latter to some extent.
Taking the difficulty of obtaining a large sample of senior managers’ psychological data in the actual study into account, upper echelons theory proposes to use background characteristics (age, term of office, education, function and socio-economic status) as the proxy of personality, cognition, behavior and other psychological characteristics, which greatly facilitates access to data, ensures the reliability of analysis and resolves the data obtaining problem in the study of senior management leadership. Therefore, the important effect of CEO or top management team (TMT) on strategic result of enterprises is indisputably proved by a lot of upper echelons studies based on objective background date, which responds to the theoretical challenge posed by Lieberson et al. (1972) who believes that senior managers have nothing to do with performance of enterprises in his early study. However, as a study method, background variable is a double-edged sword. On the one hand, it greatly facilitates access to data, ensures preciseness of analysis and promotes the rapid development of strategic leadership theory; on the other hand, it brings severe challenge to the upper echelons theory. Since this theory only studies background property, team composition and the association with the organization of leaders, some scholars put forward three critical views: first of all, the study of this theory is a static study and is lack of emotion, plot and action; secondly, relevant background reaction remains in the "black box" and is not really revealed, which has become the new "demography background black box"; at last, the relation between proxy variable and strategic result may occur through other variables, and there is alternative explanation.

New development presents for upper echelons theory in study breadth and depth. In terms of breadth, the study objective is extended from senior executive to TMT. Researchers continue to look for new background variables to improve the force of explanation, especially special ones, such as transnational work, research and development experience. These variables have higher explanatory power when used to explain internationalization, research and development and innovation strategies of enterprises than the complex background variables, such as traditional age, sex, term of office and major. In terms of depth, Finkelsterin and Hambrick (1996) expanded upper echelons theory into strategic leadership theory, and began to directly check senior managers' psychological characteristics, such as personality, cognition, values and team dynamics process, investigating the effect of these subjective variables on strategic decision.

In addition, upper echelons theory continues to dig the boundary conditions which influence senior managers' behavior. Management autonomy or freedom of action of CEO has become the most important situational factors. Management decision right of CEO is subject to the influence of the external environment, internal organization and CEO personality characteristics. High autonomy is similar to "weak situation", that is, when situational characteristics are too weak to specify action measures, personal reference system of decision makers, rather than objective characteristics of the situation, becomes the basis for actions.
2.3 Personality characteristics of strategic leaders

2.3.1 Previous studies on personality characteristics

Persona (personality) is a word we often use to describe ourselves and others. It comes from Latin, which means a kind of mask used by drama actors. From the original meaning of personality, people will think that it is a person's appearance, which is the aspect can be observed by others. However, it also contains many other personal properties. Personality is the synthesis of a variety of characteristics beyond the superficial impression. From the perspective of structural view, Gatewood and Field (1998) believed that personality refers to an ongoing facet, which is used to explain the consistency of individual behavior under different scenarios.

Early scholars found in English vocabulary dictionaries that words used to describe personality and individual behavior having diversified characteristics, which reflects uniqueness and complexity of personal character. Thus, there is no definition for personality which is uniform and acceptable to everyone. Guilford (1959) considered that personality is a kind of durable and special characteristic of one individual different from other individuals. Allport (1961) emphasized that character is a dynamic combination in the psychology system, which determines the unique character form of the individual adapts to external environment, thinking and behavior. The individual's behavior will reflect his/her unique character trait. Scott and Mitchell (1972) pointed out that character is formed through the accumulation of a series of psychological growth and development. Since character has continuity and stability, different characters will result in individual difference. Therefore, character can be used as standard to distinguish individual differences.

Personality has integrity and systematicness and personality characteristics can last a very long time. Thus, personality behavior can be predicted. Meanwhile, personality is formed in the process one person interacts with the external environment. Everyone has different personality characteristics because of different stimulation from the environment. Some personalities are explicit, but others are hidden, and so personality is adaptive, unique and complex. It represents the normal behavior pattern of one person, and is demonstrated by mental activities, physical activities, attitudes or personal characteristics, including physical and physiological characteristics, characters, temperament, abilities, motivations, interests, values, social attitudes and pathological tendencies at least.

To sum up, personality may represent a personal personality different from others. Therefore, personality is used to identify individuals. It also can be used to explain the reason of individual behavior and explain or predict individual behavior.

2.3.2 Personality characteristics of strategic leaders

In academic circles, demography characteristics and personality characteristics of leaders are used to predict decision-making behavior. Comparing to personality characteristics, demography characteristics are objective and easy to measure. Thus, upper echelons theory pays more attention to background and demography characteristics of strategic leaders and
uses them to predict their effects on strategic decision and strategic performance of enterprises. With the development in the study fields of charismatic leader and transformational leader, the study that predict leader behavior and performance using personality characteristics gets more and more confirmation (Hartog and Koopman, 2001). The study of personality characteristics reveals that there are indeed stable individual differences among leaders. Some scholars even think that decision-making behavior can be better predicted using personality characteristic dimension. It has been proved that personality variables are more valuable in predicting strategy of enterprises. In other words, the result of psychological variable will be more directly in revealing values, faith and behavior disposition of strategic leaders which are related to strategy formulation and strategic performance.

McClelland (1961) made a groundbreaking study of personality characteristics of pioneering entrepreneurs and proposed that the need of achievement their prominent personality characteristic. Since then, some studies have found that need of achievement, locus of control, risk-taking propensity and tolerance for ambiguity are more stable in describing strategic leaders, which are regarded as the most common successful characteristic of strategic.

In recent years, a variety of personality characteristics began to unify, and five core characteristics have formed, that is, big five personalities, which includes conscientiousness, agreeableness, extraversion, openness to experience and emotional stability. Years of study found that big five personalities can influence individual’s performance, organizational citizenship behavior, occupational interest and other outcome variables. Thus, big five personalities is regarded as one of most powerful tools to study personality difference, and effects of big 5 personality on behavior and performance of strategic leaders has been proved by some literatures.

To sum up, there are indeed personality differences among leaders. This kind of difference will directly influence behavior of leaders and bring different enterprise performance.

2.3.3 CEO personality characteristics and strategic choice

In this study, the following personality characteristics of CEO, especially strategic leaders, are proposed based on the above studies, broad definition of personality and research priorities and new trends of strategic leaders in recent years:

(1) locus of control; (2) need of achievement; (3) risk-taking propensity; (4) narcissism propensity;(5) big 5 personality.

1. Locus of control and strategic choice

Locus of control is first proposed by Rotter (1954), an American social learning theorist. It refers to the degree people believe they can control their life. Internal control theory believes that conditions of people themselves are decisive factors and it thinks that behavior result is determined by their own behaviors or inherent characters; while external control theory believes that the overall environment is the decisive factor and it pays attention to behavior, luck or opportunity of others.
Many scholars at home and abroad have studied personality characteristics of locus of control. For example, some studies think that internals are more positive, independent and can focus on things they are interested in or think important, but externals are more negative, dependent and care about things others think important (Butterfield, 1964; Brissett and Nowicki, 1973). Joe (1971) believed that externals are gloomy, offensive, opinionated and lack of confidence and insight. They have low demand for social desirability. Broedling (1975) found through his study that internals are easier to be motivated and get better performance. Internals are related to self-expectation. In an organization, managers with higher salary are often internals. Externals' performance is worse than internals. Wage of externals is lower under the same conditions.

Miller et al. (1982) is the first one who proposed that locus of control of CEO will have important influence on strategy. CEOs with tendency of internal control incline to believe that they have significant influence on matters in their life and work, and firmly believe that consequences of their actions are mainly the result of their own efforts. Thus, this kind of CEO inclines to focus on innovation of products and marketing and likes adventure. They lead competition in their industry instead of following other competitors. This viewpoint is proved by empirical data. For example, Miller and Toulouse (1986) collected data of personality of 97 CEOs from Canada through questionnaire survey. The study showed that CEO with tendency of internal control demonstrates a stronger ability in product innovation. They are more future-oriented and have more resourceful problem-solving approaches. Furthermore, the study shown that the influence of locus of control of CEO on strategic decision-making becomes more significant in small enterprises and more changeable environment. Moreover, the study also found that enterprise performance will be directly influenced by CEO personality characteristics.

2. Need of achievement and strategic choice

The need of achievement is a desire or tendency of one person wants to get things done as quickly as possible. McClelland (1961) concluded three important motivations or needs of individuals in work situations: need of achievement, need of power and need of agreeableness, and pointed out that need of achievement is a significant characteristic of entrepreneur which is different from non-entrepreneur. People have a strong need for achievement is eager to do things more perfect, improve work efficiency, and achieve greater success. What they are looking for is the pleasure brought by overcoming difficulties, resolving problems and making arduous efforts in the process to succeed as well as personal sense of accomplishment after the success, rather than material rewards brought by success. Through studies, Miller and Toulouse (1986) found that when CEOs with higher need of achievement make strategic decision, they are more active and focus on strategic analysis, and tend to choose formal and complex organizational structure. However, they prefer using broad and marketing-oriented strategy when they choose strategy.

Miller et al. (1988) further studied the systematic relationship among CEO personality, external environment, organizational structure, strategic decision-making process and strategic content. They made questionnaire surveys to 77 enterprises with over 500 employees.
Through analysis of the relationship model of linear structure, they found that CEO's need of achievement will significantly influence the rationality degree of strategic decision-making process, and the latter will further influence the degree of formality and integration of the organizational structure. Moreover, they found that uncertainty of the external environment will have a positive impact on product innovation. Product innovation will improve the degree of formality and integration of the organizational structure, but it will reduce the degree of concentration of organizational structure. These findings further confirmed the relevance and importance of CEO personality throughout the strategic management research.

3. Risk propensity and strategic choice

Risk propensity usually refers to risk seeking, neutral or circumvent attitudes and behavior taken by individuals or organizations in the face of uncertainty events. With regard to the nature of risk propensity, there are two different views in the academic circles. The first view believes that risk propensity reflects a potential and stable natural personality of individuals in their risk decision making behavior. This kind of characteristic is independent of any specific decision-making situation and generally changes with the growth of individuals' experience (Sitkin and Pablo, 1992). Under the guidance of this definition, many scholars developed the tool and tried to use it measure general risk propensity of individuals (Kogan and Wallach, 1964; ackson et al, 1972; Keinan,1984). The second view believed that the risk propensity changes with the change of the specific decision-making environment, which means that risk propensity of the individual is different in different situations (MacCrimmon and Wehrung, 1985).

The first view is adopted in this paper. Risk propensity is regarded as a general personality characteristic, which reflects risk seeking or avoidance trend of individuals when a variety of elements are consistent with each other. The study found that the relationship between strategic risk taking and enterprise performance is fairly complex (Baird and Thomas, 1985). The reason is that strategic decision is filtered and decided by senior manager. Therefore, strategic decision is partly influenced by personality characteristics of managers relating to risk. For example, managers with high risk propensity tend to choose decision scheme with high uncertainty (William, 1965). Sitkin and Weingart (1995) found through studies that risk propensity of enterprises influences its merger and acquisition decision-making process, and the risk propensity of enterprises is significantly influenced by the risk propensity of senior managers. In addition, some studies found that senior managers have higher risk propensity than ordinary people, and different senior managers have different risk propensity (Gupta and Govindarajan, 1984).

4. Narcissism propensity and strategic choice

Narcissism has had a significant influence on Freud's psychology and so it played a significant role in clinical psychology, social psychology and personality psychology. Narcissism propensity reflects one person's arrogance degree (Chatterjee and Hambrick, 2007). Its main manifestations are self-worship, self-centered, self-righteous, leadership and authority, superiority and self-pride and think that the privilege is deserved. It is worth
mentioning that narcissism is not regarded as a kind of morbidity in modern psychology. It is regarded as a character trend everyone has more or less.

Currently, CEO's narcissism propensity is the CEO personality characteristic which is studied the most times in strategic management field, and it is also one of popular study topics of strategic management. Chatterjee and Hambrick (2007) proposed that CEO with high narcissism propensity will highlight his/her photos in the annual report of the enterprise, will mention his/her name many times in the new release, will use I rather than we in interviews, and will set his/her salary much higher than other managers of the enterprise. They created a CEO narcissism index according to these indicators. They found through studies that narcissistic CEO is more likely to bring major changes to corporate strategy, more likely to conduct frequent, especially large-scale acquisitions, and will bring ups and downs to the financial performance. It is interesting that although they found that narcissistic CEO will bring ups and downs to the financial situation, they did not found CEO's narcissism propensity has any significant influence on the average financial performance.

Chatterjee and Hambrick (2011) further found that narcissistic CEO is indifferent to changes of objective performance indicator of enterprises, but is very sensitive to subjective evaluation of the media. Gerstner et al (2013) adopted the same CEO narcissism index and studied the response of large pharmaceutical enterprises to technological change. They found that narcissistic CEO is willing to take more aggressive strategies to improve the technical innovation investment of the enterprise in the face of challenges of new biopharmaceutical technology. In addition, when they found that the media pays more attention to new pharmaceutical technology, the above behavior will be more significant. These findings prove again that narcissistic CEO likes to take aggressive strategies to win worship and admiration to meet the needs of their arrogant feeling. Moreover, Wales et al. (2013) found that CEO's narcissism propensity will bring positive effect on the entrepreneurship orientation of enterprises and further affirmed the effect of CEO's narcissism propensity on ups and downs of performance of enterprises.

5. CEO's big five personalities and strategic choice

Big five personalities is widely regarded as the five dimensions which can describe main characters of people in individuality psychology and it includes conscientiousness, extraversion, agreeableness, openness to experience and emotional stability. Conscientiousness contains several features: first, being earnest, responsible and detail-oriented; second, being diligent, tough and achievement-oriented; at last, this kind of people have sense of organization and are self-discipline and reliable. Comparing to calm, silent, cautious introverts, extroverts are sociable and dictatorial. They positively respond to external positive stimuli and are more willing to seek excitement. Agreeableness is a personality characteristic closely related to treatment of interpersonal relationship. Individuals with high level of agreeableness are often polite, tolerate and altruistic. They like to cooperate with others rather than competition and they are easier to get trust of others. Individuals with high level of openness to experience are often creative, imaginative and insightful and good at introspection. They have strong curiosity and thirst for knowledge as well as divergent
thinking. Individuals with emotional stability are often comparatively positive, stable and are calm in the face of pressure. On the contrary, individuals with high level of nervousness are easier to be plagued by long-term negative emotions. They have strong sense of insecurity and are emotional (McCrae and Costa, 1988).

Peterson et al. (2003) studied how CEO's big five personality influences performance of enterprises through influencing internal interaction among top management team. They first introduced Q-sort method into the study of CEO personality and classified CEO personality with a lot of systematic classification methods based on the public second hand data (for example, CEO interview record, books and articles they write, speeches they give and news about them). Through the analysis of 17 CEOs' personality and the study of internal reaction of the corresponding top management team, they found that five personality characteristics indeed have significant influence on internal interaction among top management team and performance of the enterprise.

Nadkarni and Herrmann (2010) made a systematic and in-depth study of how CEO's big five personality influences strategic flexibility (refers to the ability of enterprises adapt to unforeseen changes in external environment) and performance of the enterprise through questionnaire. They found that strategic flexibility of enterprises will be negatively influenced by CEO conscientiousness and positively influenced by CEO extraversion, openness to experience and emotional stability. Moreover, CEO agreeableness first has positive influence on strategic flexibility and then the influence becomes negative. This study found and pointed out that strategic flexibility of enterprises has significant positive influence on performance of enterprises, and the effect of CEO personality on enterprise performance is indirectly realized through its influence on strategic flexibility. The study made by Nadkarni and Herrmann (2014) further indicated that big five personality of CEO may have different influence on different strategy issues. This study proposed that five personality characteristics of CEO have two significant influences on strategic transformation of the enterprise, i.e., the influence on initiation of strategic transformation and the influence on the implementation effectiveness of strategic transformation. They made questionnaire survey of 120 enterprises in Ecuador and found that extraversion and openness to experience of CEO only have positive effect on the initiation of strategic transformation, but emotional stability and agreeableness of CEO influence both initiation and effectiveness of strategic transformation. Moreover, they found that CEO conscientiousness has negative effect on initiation and effectiveness of strategic transformation. Colbert et al. (2014) expanded the study of how personality influences strategy to the level of personality of top management team, and focused on the investigation to the effect of conscientiousness of CEO and top management team on performance of the enterprise. They found that conscientiousness of both CEO and top management team has significant positive effect on performance of the enterprise.

2.4 Managerial cognition and strategic choice

2.4.1 Concept and definition of managerial cognition

Cognition is a term in psychology. From the perspective of essence, cognition involves
personal perception, screening and way of conceptualizing information (Weick, 1990) and becomes the basis for decision-making and action accordingly.

In the management field, it is difficult to have a comprehensive understanding to complex information for decision makers because of their "bounded rationality". Thus, the formation of simplified cognitive representation based on the limitation of cognition is crucial to effective decision-making of managers. The so-called managerial cognition is also known as cognitive structure, cognitive schema or cognitive model. It refers to a set of knowledge structure strategic decision makers use in the process of strategic decision-making (Daft and Weick, 1984; Fisk and Taylor 1991; Huff, 1982; Lyles and Schwenk, 1992; Prahalad and Bettis, 1986). This set of knowledge structure of decision makers is formed in the long-term business activities, which relies on past experience strategic decision makers and their fairly stable perception and understanding to specific things.

From the perspective of definition of managerial cognition, it can be understood from two aspects:

First, managerial cognition is a set of knowledge structure of strategic decision makers, and it contains concept and the relation between concepts. Walsh (1995) believed that managerial cognition is a set of "knowledge structure" of strategic decision makers. This set of knowledge structure "is a collection of related information" (Weick and Bougon, 1986) and is used by strategic decision makers to seek and explain information in the environment. It can be seen from the concept of managerial cognition given by Walsh (1995) that what he inherited is concept and paradigm of cognitive psychology. The difference is that managerial cognition is the knowledge structure of strategic decision makers and cognitive psychology believes that cognition is a set of knowledge structure of individuals. For strategic decision makers, their role, function and questions addressed are very different from general staff. Although they are both sets of knowledge structures of objective subject, the process of obtaining and function may be different. Thus, we further identify managerial cognition as the knowledge structure of strategic decision makers. These sets of knowledge structure contain concept and the relationship between concepts. The example of knowledge structure of managerial cognition is shown in Figure 2-2.
Second, knowledge structure of managerial cognition is stable and scenario-dependent, and so it exists in the form of pattern. Subsequent scholars, based on Walsh (1995), gradually realized that managerial cognition is not only a set of knowledge structure but also a kind of characteristic of pattern in essence from the perspective of organizational level. Thus, Lamberg and Tikkanen (2006), Gavetti (2005) and other scholars called managerial cognition as "cognitive pattern". Regarding managerial cognition as a pattern plays an important role in understanding why managerial cognition influences and how does it influences strategic decision making. We will often focus on the search, interpretation and application of managerial cognition if we only regard managerial cognition as a simple set of knowledge structure. Our understanding of managerial cognition will be expanded if we further regard it as a kind of pattern.

The so-called pattern is a habit and the understanding of characterization of the world by people (or team) (Luo-Mian, 2008). Cognitive pattern is "the psychological characteristics which have been basically formed of the subject to specific matters and will influence the behavior of the object. It is the deep-rooted belief, assumption and summary of the subject to matters and it influences understanding of the subject to the world and actions the subject takes" (Zhou Xiaodong, 2006). As a pattern, managerial cognition is embedded into hearts of strategic decision makers. Managerial cognition has stable characteristics and is expressed in enterprise behavior, decision making and other thinking activities through a conscious or unconscious form. The formation of managerial cognition needs a long time. It exists in the subconscious of strategic decision makers, has stable characteristics, and may change only under huge impact.

It should be noted that knowledge structure and pattern characteristics of managerial cognition cannot be separated. Managerial cognition being a pattern refers to that knowledge structure of managerial cognition is stable and scenario-dependent, and knowledge structure exists in the form of pattern. We cannot discuss knowledge structure without pattern and cannot discuss pattern without knowledge structure; otherwise, it will be one-sided. In this paper, this view is summarized as "knowledge structure of managerial cognition is stable and scenario-dependent, and so it exists in the form of pattern".

2.4.2 Analysis level of managerial cognition

Managerial cognition is a multi-level concept. Walsh (1995) pointed out that managerial
cognition can be observed and analyzed from individual, team and organization. The level of individual explores the effect of psychology, knowledge and cognition of individual managers (refers to CEO of enterprises in the study) on individual behavior, strategic choice and performance of enterprises. It believes that individual experience and character of CEO will have important influence on the formation and development of managerial cognition of CEO individual. From the team level of managerial cognition, when decision makers of the enterprise form a team, their knowledge structures will gather together, and set of collective knowledge structure will appear. Managerial cognition of the team level is the result of team members after coordination. Walsh and Fahey (1986) proposed that belief of members of strategic decision-making team will have a collective cognitive structure, thereby influencing strategic decision making and strategy implementation of enterprises. From the perspective of organizational level, what managerial cognition explores is noema and thought expressed by the organization as a whole, which is called "mutually-shared schema" of organization by Walsh (1995). Managerial cognition at the organizational level has positive and negative effect on organization: the positive effect is that mutually-shared schema of organization can ensure consistency of organizational behavior in the rapidly changing environment and the negative effect is that cognitive bias may result in enterprise behavior biases, enterprises will ignore potential competitive risks and information and strategic blind spot is generated accordingly (Reger and Huff, 1993; Walsh, 1995). Individual, team and organization level of managerial cognition are not mutually exclusive. They supplement and interact with each other instead.

This study focuses on the individual level of managerial cognition, which means that it studies how CEO, as the "steersman" of enterprises, searches and explains information, makes and implements strategic decisions. Thus, in this paper, the study of managerial cognition focuses on individual level. Specifically, it focuses on knowledge structure and managerial cognition of CEO.

2.4.3 Dimension of managerial cognition

Dimension of managerial cognition is divided into two categories by scholars:

In the first category, scholars represented by Nadkarni and Barr (2008) explored which specific concept strategic decision makers concern in their knowledge structure of managerial cognition and what is the relation between concepts. They divide managerial cognition into two dimensions accordingly: focus of attention and casual logic. Focus of attention refers to which or what kind of concept occupies a central position in knowledge structure of managerial cognition of strategic decision makers. Measure one concept in knowledge structure of managerial cognition with focus of attention, if the value is high, the concept occupies a central position in knowledge structure of managerial cognition of strategic decision makers, and strategic decision makers pay more attention to this (category of) concept. Casual logic is the logic relation between concepts in knowledge structure. Causal logic tells us that practitioners are bound to think concept B when they see concept A. Causal logic determines the way for strategic decision makers to understand and apply information.
In the second category, scholars represented by Freeman (1978), Knoke and Kulinski (1982) tended to explore the whole characteristics of knowledge structure of managerial cognition of strategic decision makers. For example, they focused on if knowledge structure of managerial cognition is simple or complex, centralized or decentralized. Accordingly, they measured the characteristic of managerial cognition of strategic decision makers with "concentration of knowledge structure of managerial cognition" and "complexity of knowledge structure of managerial cognition". The classification method of complexity and concentration of knowledge structure of managerial cognition is similar to that of focus of attention and causal logic, which is based on analysis of knowledge structure of managerial cognition. The classification method of complexity and concentration of knowledge structure of managerial cognition only pays more attention to characteristics of knowledge structure of managerial cognition of strategic decision makers as a whole.

Although the above two classification methods are based on knowledge structure and characteristics of relation between concepts, they have different application. The classification method of focus of attention and casual logic focuses on the effect of managerial cognition on certain strategic decision. For example, the attention to new technologies of strategic decision makers is the reason that determines whether the enterprise quickly enters the emerging industry or not. The classification of concentration and complexity is often combined with enterprise flexibility (Nadkarni and Narayanan, 2007), convention (Gavetti, 2005) and other studies.

2.4.4 Effects of managerial cognition

The effect of managerial cognition can be divided into two kinds: "lens" effect and "pattern" effect. The former focuses on the effect of managerial cognition on information search, interpretation and application and the latter focuses on the effect of managerial cognition on analogy, noema, interpretation and recognition.

1. Information search, interpretation and application - "lens" effect

To analyze managerial cognition from a static point of view, the focal point lies in the understanding of basic unit of managerial cognition and the influence of its nature on enterprises. The precondition for interpretation of the effect of managerial cognition from a static point of view is that managerial cognition is a set of information structure of strategic decision makers (Weick and Bougon, 1986; Walsh, 1995). Content and composition of this set of knowledge structure of strategic decision makers needs to be further clarified. Based on the study of Walsh (1995), managerial cognition of strategic decision makers includes two parts: (1) concept; (2) causal logic between concepts. These two components of managerial cognition of strategic decision makers determine the "lens" effect of managerial cognition.

The role of causal logic between concepts is that strategic decision makers search environmental information and understand its meaning according to concept and causal logic between concepts in knowledge structure of managerial cognition. In this sense, managerial cognition is like a lens which filters and processes the original information in the environment. Therefore, the information used in strategic decision making is filtered and processed by
strategic decision makers through managerial cognition, rather than the original information in the environment. Secondly, the causal logic between concepts determines the interpretation of information and behavior logic of strategic decision makers (Gavetti and Levinthal, 2000). The causal logic between concepts refers to the relation between concept A and B in the knowledge structure of strategic decision makers. For example, in the face of financial crisis, some strategic decision makers think that it can bring opportunities to the enterprise, i.e., "financial crisis → opportunity". However, other strategic decision makers believe that financial crisis brings threat to the enterprise, i.e., "financial crisis → threat". We can imagine that these two kinds of enterprises will have different behaviors in the financial crisis under the guidance of these two different causal logic. The reason why enterprises make different decisions when they are faced with the same external environment information is that strategic decision makers have different causal logic.

According to the point of views of the existing literatures, we think that there are two meanings of managerial cognition from the static point of view: managerial cognition reflects the understanding of strategic decision makers to concept or the importance of goal; managerial cognition reflects the concept held by strategic decision makers or complex causal relationship between the goals. Concept implies the goal that strategic decision makers may pursue and causal logic implies the potential logic for strategic decision makers to pursue goals. Scholars used two terms, "focus of attention" and "causal logic", to summarize concept and logic relationship between concepts in knowledge structure of managerial cognition. Focus of attention refers to the degree that strategic decision makers are dominated by the ideal of one (or more) fields when they make subjective statements on the environment. Focus of attention provides strategic decision makers with a filter to identify problems. Strategic decision makers selectively focus attention through focus of attention in their knowledge structure and pay attention to the areas with focus of attention. At the same time, they selectively ignore information of other areas. Causal logic refers to the deterministic relationship between concepts in the knowledge structure of managerial cognition of strategic decision makers. For strategic decision makers, casual logic determines construction, understanding and communication of strategic issues (Huff, 1990; Barr and Huff, 1977), and it is the main basis for strategic decision-making and implementation (Fiske and Taylor, 1991).

To sum up, from the static point of view, managerial cognition is a set of knowledge structure of strategic decision makers. It consists of concept and interrelation between concepts which are used by strategic decision makers to understand the environment. Its effect is concentratedly shown that a set of information process has effect on strategic decision making of enterprises in three aspects: providing information search function (Porac and Thomas, 1990; Reger and Huff, 1993), providing information interpretation function (Huff, 1990; Walsh, 1995) and providing action logic function. Thus, managerial cognition is regarded as "lens". Strategic decision makers explain information through this lens and convert it into strategic actions of organizations (Huff, 1982).

2. Analogy, noema, interpretation and recognition - "pattern" effect
In dynamic environment, knowledge structure of managerial cognition of strategic decision makers is stable and scenario-dependent, and so it exists in the form of pattern. The effect of managerial cognition is also shown as a kind of bounded rationality based on the reaction, which is called "pattern" effect of managerial cognition. Managerial cognition has been called "cognitive schema", "cognitive pattern" and "mental model" (Walsh, 1995) just because of this.

This "cognitive pattern" of managers is the result of long-term business activities. It is deep-rooted belief, assumption and generalization to things and a habit of thinking and behavior. Nadkarni and Barn (2008) thought that it takes 10 years or so to form managerial cognition. In the formation process of managerial cognition, the environment of the enterprise and personal beliefs of strategic decision makers, especially continuous feedback of enterprise performance, makes managerial cognition has the characteristic of environmental embeddedness. Moreover, this environmental embeddedness of managerial cognition of strategic decision makers is an embedding to the past environment of the enterprise rather than to the current environment.

Although it is an embedding to the past environment, it influences present and future decisions of the enterprise. Deng Shao-jun and Miao Ming-jie summarized the relevant literatures an proposed several models of the effect of managerial cognition on decision making of the enterprise: (1) analogy pattern, it is the cognitive pattern that strategic decision makers deal with new issues according to their familiar situations (Gavetti, 2005); (2) noema test pattern, it refers to that strategic decision makers, relying on their existing deductive and inductive cognition, propose hypotheses to explain the known facts, thereby deducing explanation which is closest to the cognitive structure (Farjoun, 2008); (3) interpretation pattern, it refers to that strategic decision makers outlines the mental sketch about one issue according to their past experience and intuition and uses this mental sketch to instruct actions; (4) identification pattern, it focuses on the influence of organizational identification on strategic decision making of the enterprise. Organizational identification means that members of the organization and external stakeholders have the same perception of organizational core concepts. Organizational identification has binding effect on strategic decision making of the enterprise. Members of the organization tend to pay attention to and explain external events in the manner which is consistent with organization identification and make decisions according to the action logic identified by the organization. All the above four patterns focus on the important effect of the pattern characteristics expressed by the managerial cognition structure of strategic decision makers on strategic decision making of the enterprise. It can be seen that under bounded rationality, strategic decision makers make strategic decision based on the existing managerial cognition structure, analogy or inference rather than accurate calculation of "calculative rationality", which is different from the decision model of complete rationality. Especially in the dynamic environment, strategic decision makers build strategic issues, provide explanations and then respond relying on the existing managerial cognition because information in this environment is very rich and complicated.
2.4.5 Effects of managerial cognition on strategic decision of enterprises

1. Effect of managerial cognition based on the perspective of convention on strategic behavior and organizational capability

The dynamic environment focuses on that strategic behavior and organizational capability of enterprises can rapidly change with the change of the environment (He-Zheng, Tan Jin-song and Lu Yuan-yuan, 2006). Although the mainstream of managerial cognition is still "managerial cognition → enterprise behavior → enterprise performance", they studied the effect of managerial cognition on enterprise behavior (Eggers and Kaplan, 2009). However, some scholars begin to pay attention to the important variables in obtaining and maintaining of competitive advantages of the enterprise in dynamic environment, such as path dependence (Gavetti, 2005), convention (Lamberg and Tikkanen, 2006) and organizational flexibility (Nadkarni and Narayanan, 2007). They also do some exploratory research in these areas. For example, Gavetti and Levinthal (2000) and Gavetti (2005) studied the relation between managerial cognition and convention. They believed that the difference between managerial cognition and convention is "looking forward" and "looking back" in essence, and both of them determine behavior and result of the enterprise. We summarized this point of view as "effect of managerial cognition based on the perspective of convention on strategic behavior and organizational capability".

The concept of convention originates from evolutionary economics. It is used by the view of industrial structure and resource-based view, significantly promoting the development of these two views. With bounded rationality, strategic decision makers cannot timely make strategic decisions through "calculative rationality". Thus, strategic behavior of the enterprise shows a characteristic of "path dependence" and this path dependence is a convention. This is the meaning of convention to the view of industrial structure. Evolutionary economics thinks that enterprises show a consistency in their development just because of this convention. This consistency is the basic difference to distinguish this enterprise from other enterprises. In essence, convention is an aggregation of knowledge (Winter, 1987). Managerial cognition is also a set of knowledge structure, which has stable characteristics (Walsh, 1995). Thus, Gavetti and Levinthal (2000) explored convention and managerial cognition from the perspective of knowledge, and believed that convention and managerial cognition of enterprises come from bounded rationality characteristic of strategic decision makers. Bounded rationality characteristic of strategic decision makers resulted in collection and aggregation of enterprise knowledge and special enterprise knowledge is formed through trial and error process. This set of knowledge can be divided into convention and cognition according to different dimensions. Convention is based on learning to experience and it is featured by "looking back". However, cognition provides a forward-looking approach of learning and this approach is based on the evaluation made by strategic decision makers to cognition (Gavetti and Levinthal, 2000).

To sum up, in the existing literatures, convention and cognition are generally used as antecedents for strategic decision of enterprises. Organizational capability can be regarded as a collection of convention through bonded rationality and enterprise behavior is the decision
made based on convention. Meanwhile, strategic decision is influenced by managerial cognition of decision makers, i.e., strategic decision makers make decision based on their cognition of the external environment and understanding of causal relationship of behavior-result, and then influence strategic behavior and organizational capability.

2. The effect of managerial cognition on competitive advantages of enterprises

Although the concept of managerial cognition is inherited from cognitive psychology, what the study of organizational management ultimately needs to resolve is the influence of managerial cognition of strategic decision makers on competitive advantages of enterprises (Walsh, 1995). Literatures in early times focused on what kind of cognitive structure can provide enterprises with competitive advantage. For example, through comparison of successful and unsuccessful entrepreneurs of middle and small-sized enterprises, Laukkanen (1993, 1994) found that strategic decision makers of enterprises which survived have complex and abundant cognitive structure, and strategic decision makers of unsuccessful enterprises have simple cognitive structure. Laukkanen's studies further verified that complex and abundant managerial cognition will promote survival and development of enterprises and simple managerial cognition will have an adverse effect on survival and development of enterprises. Through comparison of managerial cognition of strategic decision makers in high performance enterprise and low performance enterprise in the retail industry, Jenkins and Johnson (1997) found that successful strategic decision makers often focus on "customers" in their cognitive structure and meeting demands of customers is used as an important index when they measure enterprise performance. This study indicated that in knowledge structure of managerial cognition, enterprise performance difference will be caused if strategic decision makers focus on different concepts.

The above studies proved that managerial cognition has a very important influence on the survival and development of enterprises. What is the reason for this influence? Some scholars turned to opening the internal "black box" of the effect of managerial cognition on enterprise performance. Other scholars tried to explain the obtaining of competitive advantages of enterprises through the theoretical logic of "managerial cognition - enterprise behavior - enterprise performance" (Gallen, 2006; Goodhew et al., 2005; Delgado-Garcia and Fuente-Sabate, 2010). They believed that knowledge structure of managers with bounded rationality determines information search, information interpretation (Julian et al., 2008) and information filtering (Daft and Weick, 1984) and promotes the reform of enterprise strategy (Zhou Xiaodong, 2006) and enterprise strategic decision (Gallen, 2006). They further believed that this knowledge structure is the decisive force of enterprises to obtain competitive advantages. For example, through empirical studies, Nadkarni and Barn (2008) proved that the degree of focusing on a concept in the managerial cognition of strategic decision makers determines concern and understanding of enterprises about the change of the concept and ultimately influences strategic reaction of enterprises to the change of the concept. Eggers and Kaplan (2009) found through studies that the degree of concern for new technologies in managerial cognition of strategic decision makers is the decisive force of the existing enterprises to enter the new filed.
Chapter III Research Design

3.1 Theoretical framework

3.1.1 Core theory: strategic choice based on managerial cognition

1. Core thought of cognitive school of strategic management

According to traditional strategic management research trend, different behaviors of enterprises are attributed to objective external reasons, such as resources (Barney, 1991), industries (Porter, 1980) or transaction cost (Williamson, 1975). What is different from this is that cognitive school tries to explore the answer among individual managers. In the cognitive perspective of management, managers are assumed to be bounded rational “information workers” and they spend plenty of time absorbing, handling and spreading the information regarding questions and opportunities, what’s more, as managers are faced with an extremely complex and undefined environment, their limited information handling ability hinders their ability to accurately perceive environment and perfectly explain information. Figure 3-1 introduces a simplified model regarding the effect of managerial cognition on strategic decision of enterprises. According to the strategic management theory based on cognitive perspective, different mental model of managers on environment and resources and processes necessary to the success under special environment will lead to different manager behaviors, which will finally influence the organizational performance.

Figure 3-1 Strategic Management Model Based on the Cognitive Perspective of Management

Data source: Bourgeois, Duhaime and Stimpert (1999)
As researched by Bourgeois, Duhaime and Stimpert (1999), managerial cognition will influence decisions and construct strategies, which will influence enterprise performance and decide whether the enterprise has competitive advantages. They concentrated on the discussion of four important mental models and corresponding decisions: the first refers to the mental model of managers on industrial environment and their decision on definition and positioning of enterprises; the second refers to the mental model of managers on how enterprises compete and their decision on corporate strategy; the third refers to the mental model of managers on corporate scale and diversification and their decision on corporate strategy and diversification; the fourth refers to the mental model of managers on how to organize and their decision on organizational structure. These mental models will generate decisions on corporate and enterprise strategy and organizational structures, etc. Then these decisions will be explained and turned into actions by organization. A series of actions will bring specific market positioning and particular resources and abilities to enterprises. Finally, market positioning, resources and abilities will determine the performance level of enterprises. Therefore, effectiveness of strategy and performance of organization depend on the degree to which the manager can accurately perceive and correctly explain the environment, resources and processes.

The relation between environment and managerial cognition model is extremely complicated. In the opinion of Smircich and Stubbart (1985), perception and enactment are two different types of cognition process. Perception refers to the construction process of “environmental” mental model by managers through feeling, problem solving and inference. Due to limited ability, managers selectively pay attention to environment, i.e., they differently and incompletely cognize environment (Fahey and Narayanan, 1989). Enactment refers to the process to make the explanation of external information objective through behaviors (Porac, Thomas and Banden-Fuller, 1989), i.e., managers influence and define environment actively through enactment.

In addition, managerial cognition is dynamic instead of static. Through adaptation and learning, managers modify their mental models to keep consistent with their environment. Strategy refers to “the model of a series of decisions” (Mintzberg, 1978). Strategy determines the performance results of enterprises through an enterprise’ market positioning, recourses and abilities formed by a series of decisions. In turn, the performance of an enterprise will provide important feedback to managers and assist them to strengthen existing beliefs or suggest them to change their existing beliefs and understandings.

Meanwhile, due to the existence of indirect and direct imitation trend, as time goes on, mutually competitive mental models of managers tend to be similar and then the common “group level beliefs” regarding market will be formed. The existence of indirect imitation is caused by that managers of different enterprises are faced with the same environment and similar technical or material problems, while there have only limited solutions to such problems, thus they will have similar belief when explaining same information and solve same problems. Direct imitation is the result of formal and informal communication and interaction among competitors, which will lead to the common knowledge on market product
categories and competitive groups (Rosa et al., 1999). The final result of indirect and direct imitation is that the strategic choices of individual companies are produced in many shared beliefs which refer to those regarding competitors and competitive mode in the market transactions (Hoff, 1982).

2. Comparison between cognitive school and other schools of strategic choice

At present, in the field of strategic management research, ten major strategic schools in terms of basic theoretical issues such as essence and formation of strategy have been formed and cognitive school is one of them. Reviewed from a dynamic perspective, cognitive school is essentially different from the strategic choice thought of other schools, which is helpful to deepen the understanding on strategic essence and guide theoretical research of strategic choice and practice of strategic reform. We chose the two typical schools of industrial organization economies represented by Porter (1980, 1985), also called positioning school, and resource school (Resource-Based View, RBV) as objects of contrast. Table 3-1 gives the basic comparison of the three schools.

<p>| Table 3-1 Comparison on Cognitive School, Positioning School and Resource School of Strategic Management |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| <strong>Positioning school</strong> | <strong>Resource school</strong> | <strong>Cognitive school</strong> |
| Basic analysis unit | Industry, company and products | Resource, process and ability | Managers, top management team, organization or industry |
| Focus of attention | Structure conditions and competitor positioning | Valuable, scarce, incompletely imitable and irreplaceable resources; asset substitutability | Mental model of management and common mental model, information collection, meaning construction and expression process |
| Environment | Knowable, objective and given | Knowable, objective and non-given; heterogeneity, immovability and situation dependence | Perceptive or even assumed, boundary constructed by cognition: |
| Resource | Knowable and objective | Knowable, objective heterogeneity, hard to be identified, immovability and situation dependence | Hard to be identified, heterogeneity |</p>
<table>
<thead>
<tr>
<th>Assumption on managers</th>
<th>Rational</th>
<th>Rational</th>
<th>Bounded rational and limited assumption ability of information handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essence of strategy</td>
<td>General and tangible positioning</td>
<td>Situation specific and influenced by resource endowment</td>
<td>Situation specific, managers and top management team influenced by resource endowment</td>
</tr>
</tbody>
</table>

From the point of analysis unit, the analysis unit of cognitive school includes individual senior managers and top management team (Garud and Porae, 1999) as well as cognitive group such as organization; the analysis unit of industrial organization economies refers to industry and company, while resource school concentrates more on the resources and abilities owned by the company (Barney, 1991; Wernerfelt, 1984).

From the point of focus of attention, the continuous competitive advantages of enterprises depend on how managers perceive and explain the environment according to cognitive perspective, thus the focus of attention of cognitive school refers to the mental model of management and common mental model, as well the process of meaning construction and expression (Narayanan and Kemrnerer, 2001); the focus of attention of industrial organization economies refers to industrial structure and competitors’ positioning. In the opinion of Porter (1991), continuous competitive advantages depend on the optimal market positioning under established structure conditions; as considered by resource school, continuous competitive advantage comes from the valuable, scarce, incompletely imitable and irreplaceable resources (Barney, 1991), and such continuous competitive advantages cannot be obtained without depriving the net present value of rental stream generated by other enterprises. The source of continuous economic rent is asymmetry of resources (Amit and Sehoemaker, 1993). Therefore, the focus of attention of resource school is the substitutability of resources (Teece, Pisano and Shuen, 1997).

From the point of environment, in the opinion of researchers of cognitive school, environment can be perceived and even enacted (Smircich and Stubbart, 1985). The boundary of environment is determined by cognition, while both industrial organization school and resource school assume that environment is knowable, objective and exogenous. The difference lies in that the former regards environment as given while the latter regards environment as dynamic and non-given.

From the point of resources, in the opinion of cognition school, resources should be identified before use and they are hard to be identified, while both industrial organization school and resource school assume that resources are knowable, objective and heterogeneous. The difference of the two is that the former gives more emphasis on immobility and situation dependence.

As to the assumption of managers, cognitive school assumes that the information processing
capacity of managers is limited and they are bounded rational, while both industrial organization school and resource school assume that managers are rational.

From the point of essence of strategy, in the model of industrial organization, strategy is general and three strategies of overall cost leading, differentiation and target concentration from two dimensions of customers’ perceptible competitive advantage and competitive scope (Porter, 1980). Different from industrial organization school, the strategies of both resource school and cognitive school are situation dependent instead of general. Resource school thinks that current strategy is limited by resource endowment and emphasizes that strategy refers to the utilization of existing proprietary resources of enterprises. In addition, resource school also considers the management strategy of developing new abilities. In cognitive school, scholars regard strategy as the cognitive perspective of strategist (Mintzberg, 1990). The development of strategy depends on the cognition of managers, while learning becomes the basic strategic problem.

3. Research on strategic leadership characteristics of enterprises based on managerial cognition

One of the research topics of cognitive school of strategic management is the characteristics of strategic leaders responsible for overall performance of the organization. Based on Upper Echelons Theory established by Hambrick and Mason (1984), background characteristics such as demographic characteristic of senior managers or top management team can partially reflect their values and cognitive level, and then further influence strategic choice and performance level. As indicated by copious literatures, correlation exists between background characteristics such as age, years of working, functional background, education, social-economic root and financial position of senior managers and organizational strategy. Some recent literatures display the structural characteristic of enterprises’ top management team – the effect of homogeneity or heterogeneity status on strategic behaviors and strategic performance. Homogeneity refers to the similarity of demographic characteristics of top management team members and their important cognitive perspective, values and experience; relatively, heterogeneity refers to the differentiation of the above characteristics of team members. Heterogeneity of team contains several dimensions, including age, tenure, education level and specialty, professional history, culture, gender and nationality, etc.

Seen from existing literatures, whether the research object is senior managers or top management team, currently, domestic research on strategic leadership characteristics is mainly about demographic background characteristic, however, the research of foreign academic world has turned to personality characteristics, such as CEO’s control tendency, achievement need, risk tendency, narcissism inclination and big five personality and their effect on strategic choice. None of the characteristics has opened the “black box” of how strategic leadership characteristics influence the organizational performance and the degree of persuasion is inadequate. Therefore, it is required to actively refer to the research results of psychology and behavioral economics for cross-over study and then promote the further development of Upper Echelons Theory.
3.1.2 Theoretical framework

Currently, China is in the period of institutional transformation, great changes are happening to the economic, political and social environment faced by enterprises and medical industry also suffers a hard period in recent years. With the promotion and implementation of policies such as national economic reform and joint reformation for public health services, medical insurance and medical production-circulation, chronic disease prevention and control, consistency evaluation, registration and approval system, classification order, grading medical and accurate medical, etc., medical industrial also comes into the key period of reform. CEO, as the most important actual maker and implementer of enterprises' strategic decision, needs to think how to integrate internal and external resources and abilities of the enterprise and make correct strategi decision based on the chance and challenges brought by the change of policy environment. With adjustment of industry policy, the strategic thought and management idea of CEO nearly determine the development of pharmaceutical enterprises.

Strategic choice of an enterprise is determined by CEO for the enterprise, however, what influence the business operation has never been objective environment or resources, but the environment and resources known and thought by people (CHEN Chuan-ming, 2002). That is to say, CEO develops and compares different decision schemes based on their knowledge about environment characteristics and its changes. Therefore, environment as a kind of endogenous variable is internalized into the cognition of CEO to influence strategic decision
of the enterprise. This is actually the internal logic of social foundation of strategic management (SHANG Hang-biao and HUANG Pei-lun, 2010). In such circumstance, the strategic cognition in specific environment requires research on CEO’s way of thinking about strategic choice, and research on how strategy is influenced by individual factors such as personality, faith and values as well as the cognition process and behaviors. Some of these issues are daily thoughts and acts of senior managers and some potentially determine the thoughts and acts of them without known by them.

“Personality determines destiny”. The personality of CEO, the “helmsman” of an enterprise, will influence their cognition on environment and then influence their strategic choice. CEOs with different personalities will have different cognitions on environment, and then make different strategic choices. According to present research results regarding relation between CEO personality and strategies, all CEO personality characteristics in respect of control tendency, flexibility, achievement needs and big five personality traits and narcissism inclination may influence enterprise strategy and performance. Therefore, it is believed in this paper that these personality characteristics determines how CEO identifies, perceives and explains environmental information on the one hand and determines how CEO actively influences and defines environment through enactment. Meanwhile, an enterprise’s market positioning resource and ability formed through a series of CEO’s strategic decisions determine the performance result of the enterprise, while performance of the enterprise will provide important performance feedback in turn to strengthen CEO’s existing cognition or suggest them to change their existing cognition.

In conclusion, the research studies how CEO’s personality characteristics influence the strategic choice and strategic performance of pharmaceutical enterprises according to the theoretical logic of “personality characteristics → managerial cognition → decision making → strategic behavior → organizational performance → managerial cognition”. Further, the essence of managerial cognition refers to a set of knowledge structure applied by strategic decision-maker in strategic decision-making. Based on the knowledge structure of managers, the dimensions of managerial cognition can be divided into focus of attention and causal logic, or complexity and focus level. Therefore, we will refer to case study method to analyze how CEO personality characteristics influence individual’s knowledge structure traits of managerial cognition, including focus of attention, causal logic, complexity and focus level, as well as their further influence on strategic choices.

3.1.3 Research questions
In order to achieve the above purpose of research, we try to solve the following research questions. Research design starts from the abstract management problem: whether pharmaceutical enterprises need to consider CEO personality characteristics in selection of CEO? In order to solve these questions in a better way, research questions of this paper are divided into three levels: Management Question, Research Question and Investigation Question. The overall structure of these questions is as shown in Table 3-2.
Table 3-2 Levels of Research Questions

**Management Question:** How can pharmaceutical enterprises select excellent strategic leaders conforming to the requirements of organizational environment?

**Research Question:** What are the effects of managerial cognition on strategic choice and strategic performance of pharmaceutical enterprises?

**Investigation Question 1:** Which CEO personality characteristics will influence the strategic choice and performance of pharmaceutical enterprises?

**Investigation Question 2:** How CEO personality characteristics influence its managerial cognition?

**Investigation Question 3:** How CEO’s managerial cognition influences its strategic choice and strategic performance?

3.2 Methodology

The research aims to analyze how CEO personality characteristics influence the strategic choice and strategic performance of pharmaceutical enterprises with CEO of pharmaceutical enterprises as object. As it is difficult to investigate strategic leaders of an enterprise, it is not easy to obtain the psychological traits of strategic leaders. Thus the mainstream research idea in the field at present is: replace individual psychological traits with observable experience of strategic leaders and focus on the relation between CEO characteristics such as tenure, functional background, education and international experience and different strategic choices and strategic performance. As observable experience is easy to be measured and more reliable, many researches have been obtained. However, such researches didn’t measure these psychological traits directly. As to the questions of how strategic leaders in complex situation relied on the knowledge familiar to them and effective before for decision-making and what role of personality of strategic leaders was played, existing literatures cannot give a satisfied answer. Therefore, the actual mechanism of action between CEO and strategic choice is still a “black box”.

In order to better and more accurately capture the effect of CEO personality characteristics on strategic behaviors of pharmaceutical enterprises, this research adopts case study method. In scientific research, case study method is applicable in answering “How” or “Why” (Yin, 1994). In the opinion of Yin (1989), the design logic of case study is a kind of empirical exploration to discuss the status of current phenomenon in real scene of life, especially effective when the boundary of scenes is not clear and difficult to be differentiated. Denzin and Lincoln (1998) and Robson (1993) also pointed out that qualitative research will make it possible to know the actual occurrence environment of events and grasp the nature of events,
especially when they emerge constantly with the process of transformation. There are reasons to adopt case study method:

First, to study the nature of questions. The paper studies CEO personality characteristics influences on strategic choice and performance. However, it is difficult to obtain CEO psychological characteristics. Therefore, existing papers replace individual psychological characteristics with observable experience of strategic leaders, and emphasize on relations among CEO characteristics, such as tenure, title, education and overseas experience and etc, strategic choice and strategic performance via empirical analysis method. However, the author believes these studies cannot expose the “black box” among CEO and strategic choice and performance. Existing papers cannot give convincing answers to how strategic leaders rely on familiar knowledge to make decisions in the complex situation, or what are effects of strategic leaders’ personalities during that process. The best way to address that is the inductive method to define the nature rather than the empirical analysis and deduction based on existing theoretical assumptions. In addition, compared with other methods, case study closes to the reality through in-depth case analysis and systematic data analysis, in other to make researchers sensitive to the reality and form a thorough understanding, thus converting cases to theories. In this way, a rational and objective observer can establish a new theoretical framework via case study.

Second, the complex and timeliness of questions. This study takes the faced dynamic complex environment as point of penetration to explore how CEOs make decisions in uncertain environment and what are the effects of their personal characteristics. The dynamic and complex environment requires the systematic and dynamic knowledge of the nature and complete picture of questions to enhance the thorough understanding, which cannot be realized by quantitative method. For example, empirical analysis is generally used in economics and management, but such method simplifies and standardizes questions and then produces conclusions via large amounts of sample data statistics. Therefore, such method cannot cope with complex dynamic questions, and inclines researches to lose information sensitivity by limiting observation perspectives. While questionnaires cover a wide range but lacks depth and diversity. With the in-depth communication between researchers and interviewees, case study deepens and diversifies the research, can thus being the complement to questionnaire. For instance, the face-to-face communication with CEOs about their experience as well as background, experiences and process of strategic decision makings facilitates researchers to detect knowledge related to the reality, and establish a theoretical framework which can produce universal interpretations, thus better solving practical management problems. Moreover, the further case study itself is not only a data acquiring process, but also an interaction process of learning and cognition, which cannot be realized by the quantitative method.

Third, case study has the advantage of acquiring abundant information via communication. The author believes face-to-face communication results in effective communication, while via questionnaires, researchers may have chances to explain related concepts to interviewees only under conditions that questions without any ambiguities or interviewees thoroughly
understanding questions. Therefore, during data collection, this study emphasizes the basis of investigate, research and mutual communication, lets CEOs completing questionnaires after reaching common understanding of nature of discussed questions, to ensure data validity.

Compared with existing methods, case study boasts the following advantages:

(1) Case study not only detailed describes phenomena, but also conducts in-depth analysis of reasons behind. It answers both “how” and “why”, helping researchers uncover the ins and outs of affairs and nature of questions;

(2) Cases originate from practice. They are the comprehensive and real reflect of objective facts without theoretical abstract or refinement. Taking case study as the start point of a scientific research can increase validity;

(3) Researchers may discover the special phenomenon ignored by traditional methods.

Although with the defects like results hardly being summarized to universal conclusions, or doubts over whether applying standards strictly, it is believed case study is the most suitable method to this research. Meanwhile, the author tests interviewing materials with paper documents filed in companies and on-site inspections, aiming to improve research quality.

When indigenous research is carried out in Chinese context, Van de Ven and JING Run-tian (2012) suggest following the thought of Engaged Scholarship. As shown in Figure 3-3, the Engaged Scholarship is in fact a kind of common participatory research method, similar to the so-called action research in the past. It can obtain the perspective of key stakeholders on certain questions under certain context, which will change the definition of enterprise on the relation between researchers and stakeholders in essence. The so-called stakeholders refer to people who invest in and participate in or show interest in the research. They are also the indispensable part of indigenous research and more familiar with the indigenous value and environment. Researchers and stakeholders can reach consensus in a better way after communication to share and assess the knowledge of opposite side. As each person of the enterprise is the product of certain history, culture and system, the enterprise will inevitably study certain topic from limited perspective. When research topic of the enterprise goes beyond personal ability limit of the enterprise, Engaged Scholarship can reach further consensus by exploring the difference of these key stakeholders’ viewpoints. Conclusions obtained from these researches are more persuasive to those obtained by scholars of individual research.
Related research was carried out based on the above Engaged Scholarship. Specifically, this research was carried out in the following steps: firstly, consulted experts and researchers of case study to make research design scheme; secondly, communicated with French professor and tutor JING Run-tian, etc. to establish reasonable theoretical research framework; thirdly, turned general questions into research questions, had wide exchange, communication and interview with CEOs, senior managers and insiders of case enterprises for questionnaire survey to form the first-hand materials; fourthly, looked for the joint point of theory and practice, introduced and discussed this topic with entrepreneurs, senior managers and colleagues, widely listened to opinions and suggestions to reach consensus and then formed the paper; meanwhile, verified theoretical model by cyclic alteration to form rigorous logical relationship that can endure scrutiny to make theory rooted in practice and provide scientific theoretical support for authentic practice.

Generally, case study mainly refers to single-case study and multi-case study. Compared with single-case study, multi-case study can improve the generality of analysis. Thus, multi-case study is more suitable for construction of theory and the conclusions inferred from multi-case study are greater in reliability and validity (Yin, 2010). Therefore, it’s better to choose multi-case study when conditions or resources can be guaranteed. As what this paper researches is the influencing of CEO personality characteristics on strategic choice and the personality characteristics include multiple dimensions while strategic choice includes four types, it is difficult to reach a comprehensive conclusion by single case. In multi-case study, the number of case study objects is generally 3-4. This research selected Sunflower Pharmaceutical, Yabao...
Pharmaceutical, Zhendong Pharmaceutical and Qinghai Spring as research object based on research characteristics.

(1) Sunflower Pharmaceutical is a medical health group company mainly engaged in the production of various kinds of Chinese patent medicine with biological pharmacy and chemical medicine as auxiliary products and integrating production, sales and R&D. Main businesses involve R&D, production and sales of all kinds of Chinese patent medicine, chemical medicine (including biological pharmacy) and big health products. It lays out product group in six fields of medicine, including medicine for digestive system, medication for children, drugs for respiratory system and cold, gynecological medicine, medicine for rheumatoid bone disease and medicine for cardio-cerebrovascular diseases, and has been involved in the field of big health. There are totally 15 dosage forms and 725 drug approval number, including 1 variety of national protected traditional Chinese medicine, 12 exclusive varieties, 402 varieties of medical insurance directory and 181 varieties of essential medicine. Its core competitiveness lies in five aspects. The first is variety advantage; it has 6 kinds of products with more than 100 million of varieties, 4 kinds of products with more than 50 million varieties and 5 kinds of products with 30 million - 50 million varieties. Product echelon and endurance construction is good. The second is category advantage: it focuses on little Sunflower pediatric medicine and forms leading position of the industry. The third is brand advantage: it has the famous trademark "Sunflower" of China and the national leading well-known trademark "Little Sunflower Pediatric Medicine"; the Little Sunflower Pediatric Medicine has been ranked in the pharmaceutical brand list of China successively from 2012-2014 and awarded as the Medicine Most Popular to Celebrities. The fourth is sales network advantage: eight sales divisions have set up nearly 200 provincial sales teams in the country. The fifth is marketing mode advantage: the company has become the representative enterprise of brand mode and conventional drug mode in the industry.

(2) Zhendong Pharmaceutical is a domestic large-scale comprehensive pharmaceutical enterprise and mainly engaged in the planting and development of traditional Chinese medicinal materials, R&D, production and sales of Chinese patent medicine, R&D, production and sales of chemical raw medicine and preparations as well as wholesale and retail of pharmaceutical products, etc. It mainly produces eight pharmacy series: anti-tumor, cardio-cerebrovascular diseases, anti-infection, digestive system, vitamin nutrition, respiratory system, antipyretic-analgesic and tonic Chinese patent medicine. It has 11 dosage forms and totally 598 varieties, including 383 varieties that have been entered into medical insurance directory and 14 exclusive products or dosage forms. The core product is the anti-tumor drug - Yanshu injection and it is the company's exclusive variety. Its core competitiveness consists of three aspects. First, reorganization and merger advantage-- it acquired Beijing Kangyuan Pharmaceutical and drove the sales growth of conventional drugs by the social brand of "Langdi Calcium". Second, scientific research innovation advantage-- the self-developed cat. 1.1 novel drug "larotaxel" and cat. 3.1 chemical drug "candesartan cilexetil" of the company have obtained clinical approval and several varieties such as bicalutamide have completed consistency evaluation; Taiyuan Engineering Center has been
identified as "national local joint engineering laboratory"; Engineering Center has been identified as "national local joint engineering laboratory". Three, traditional Chinese medicinal materials planting advantage: it vigorously develops traditional Chinese medicinal materials planting base, increase varieties, enlarge planting area and its collection covers nationally major provinces of medicinal herbs.

(3) Yabao Pharmaceutical mainly engages in the R&D, production and sales of pharmaceutical products. It focuses on the pharmaceutical fields of pediatrics, gynecology, senile chronic diseases (mainly cardiovascular and cerebrovascular diseases), including a total of more than 300 varieties such as preparations of traditional Chinese and western medicine. It forms the pediatric series drugs and health products with "Ding Gui" brand taking the leading role. Ding Gui pediatric navel paste, paste for relief of swelling and pain, medicines for cardio-cerebrovascular diseases represented by Zhenju antihypertension tablet, nifedipine sustain-released tablet, safflor injection are important products of the company. Its core competitiveness includes three aspects. First, brand advantage-- trademark "Yabao" is a "Famous Trademark of China" and has higher popularity and influence in the pharmaceutical market. Second, technology and R&D advantage-- it has the state-level enterprise technology center, successively established close technical cooperation relations with domestic and foreign well-known pharmaceutical companies and research institutes and improved the enterprise's technological innovation ability and scientific research level through joint development and technological breakthrough; it has advanced sustained-release preparations production line, advanced detecting instrument and animal laboratory. Third, marketing advantage-- at present, it has established the nationwide sales network and channels.

(4) Qinghai Spring’s main products are cordyceps sinensis series products of very grass brand produced by the holding subsidiary Spring Pharmaceutical (pure powder tablets of cordyceps sinensis, purified cordyceps sinensis and original grass). In March of 2016, the production and operation of cordyceps sinensis products were prohibited. Its core competitiveness covers four aspects. First, it has long been engaged in the R&D regarding reasonable development and efficient utilization of rare natural resources of Qinghai-Tibet Plateau. It has more comprehensive R&D data, materials and teams with rich R&D experience. Second, it has mature and stable raw material purchasing channels and unique and strict incoming quality inspection procedures formed over several years' operation to ensure the quality of the raw materials, the adequacy of supply and the minimization of purchasing cost. Third, its products take the leading position in the industry of cordyceps sinensis and have stronger core competitiveness. Four, it has the industrial leading national marketing network and high-quality partners resources, three-dimensional brand communication channels and excellent brand planning and promotion.

See Table 3-3 and 3-4 for overview of the four enterprises and their CEOs. Refer to Appendix A for specific company introduction, operational characteristics and CEO introduction of the four enterprises.
<table>
<thead>
<tr>
<th>Performance</th>
<th>Sunflower Pharmaceutical</th>
<th>Zhendong Pharmaceutical</th>
<th>Yabao Pharmaceutical</th>
<th>Qinghai Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performance</strong></td>
<td>In 2015, it realized the business income of RMB3.003 billion Yuan and the year-on-year growth was 11.62%; it realized the net profit of RMB307 million Yuan and the year-on-year growth was 1.82%.</td>
<td>In 2015, it realized the business income of RMB2.26 billion Yuan and the year-on-year growth was 17.85%; it realized the net profit of RMB64.6462 million Yuan and the year-on-year growth was 54.07%.</td>
<td>In 2015, it realized the business income of RMB2.066 billion Yuan and the year-on-year growth was 9.31%; it realized the net profit of RMB222 million Yuan and the year-on-year growth was 30.55%.</td>
<td>· In 2014, it realized the business income of RMB2.063 billion Yuan, increased by 5.4 times when compared with that of 2011; the net profit was RMB366 million Yuan, increased by 30 times when compared with that of 2011; · In 2015, it realized the business income of RMB1.401 billion Yuan and the year-on-year decrease was 32.06%; the net profit was RMB358 million Yuan and the year-on-year decrease was 2.09%;</td>
</tr>
<tr>
<td><strong>R&amp;D</strong></td>
<td>In 2015, R&amp;D investment occupied 1.58% of business income, increased by 0.12% when compared with that of 2014.</td>
<td>In 2015, the R&amp;D investment was RMB62.6082 million Yuan, increased by 12.77% when compared with the same period of last year and occupying 2.77% of business income.</td>
<td>In 2015, the R&amp;D investment was RMB109 million Yuan, increased by 40.61% when compared with the same period of last year and occupying 5.26% of business income.</td>
<td>In 2015, the R&amp;D investment occupied 0.7% of business income.</td>
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<tr>
<td>Sales situation</td>
<td>Industrial position</td>
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<tr>
<td>· It adopts the marketing strategy of &quot;focusing on variety, one strategy for one variety&quot; and develops specific sales model and promotion strategy for key varieties respectively;</td>
<td>· Medication for children and drugs for respiratory system are leading in the industry</td>
<td></td>
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<tr>
<td>· It initiated &quot;Internet+&quot; in drug sales field to build platform and explore mode;</td>
<td>· Top 100 enterprises of Chinese pharmaceutical industry</td>
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<tr>
<td>· In 2015, the sales expense was RMB1.03 billion Yuan, increased by 3.26% when compared with that of 2014 and occupying 34.3% of business income.</td>
<td>· Top 50 enterprises of Chinese pharmaceutical growth</td>
<td></td>
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<tr>
<td>· It adopts all-format and full-mode operation. The marketing mode includes the operation of terminal academic promotion of prescription drug, conventional drug channel circulation and OTC brands, etc.;</td>
<td>· Top 20 enterprises of Chinese listed pharmaceutical companies</td>
<td></td>
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<td>· It adopts different sales models for different products to distinguish product groups and corresponding indications;</td>
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<td>· Pediatric series medicines and health products take the leading position in the big health market of children</td>
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<td>· In 2015, the sales expense was RMB680 million Yuan and the year-on-year growth was 21.4%, occupying 30.1% of business income</td>
<td></td>
<td>· Top 100 enterprises of national pharmaceutical industry</td>
<td></td>
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<tr>
<td>· Marketing function is mainly focused on two holding subsidiaries: Shanxi Yabao Distribution and Taiyuan Yabao Pharmaceutical.</td>
<td></td>
<td>· Top 50 enterprises of Chinese</td>
<td></td>
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<tr>
<td>· As to the difference of drug varieties and sales channels, teams such as commercial distribution, OTC sales promotion and drug agents have been established respectively;</td>
<td></td>
<td></td>
<td>· It takes the leading position in efficient utilization and deep processing of cordyceps sinensis</td>
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<td>· In 2015, the sales expense was RMB450 million Yuan and the year-on-year growth was 6.2%, occupying 21.8% of business income.</td>
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<td>· It adopts the sales model of primary partners’ sales and auxiliary proprietary sales;</td>
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<tr>
<td>· In 2015, the sales expense was RMB204 million Yuan, occupying 14.2% of business income.</td>
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</table>

<table>
<thead>
<tr>
<th>Industrial position</th>
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<tbody>
<tr>
<td>· Top 100 enterprises of Chinese pharmaceutical industry</td>
<td>· It takes the leading position in anti-tumor field</td>
</tr>
<tr>
<td>· Top 50 enterprises of Chinese pharmaceutical growth</td>
<td>· Top 100 enterprises of national pharmaceutical industry</td>
</tr>
<tr>
<td>· Top 20 enterprises of Chinese listed pharmaceutical companies</td>
<td>· Top 50 enterprises of Chinese</td>
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</tbody>
</table>
| Strategic target | In 2018 (at the 20th anniversary of the establishment of Sunflower), it aims to build a Sunflower carrier with the scale of one hundred million and focusing on pharmaceutical industry, and realize the grouping of organization, industrial supporting, capital socialization, product seriation, technology of high-end oriented and business internationalization to create a world-class brand famous in one century. | It aims to create the most competitive health industry group and strives to internationalize R&D, production, products and brand. | Pharmaceutical industry growth  
- Top 20 enterprises of Chinese listed pharmaceutical companies  
- It aims to create the number one brand image of Chinese medication in pediatrics;  
- By 2020, the sales revenue of Yabao pharmaceutical is expected to reach RMB10 billion Yuan. |
Table 3-4: Overview of CEOs' Basic Information of Case Enterprises

<table>
<thead>
<tr>
<th>Position</th>
<th>GUAN Yan-bin (Sunflower Pharmaceutical)</th>
<th>LI An-ping (Zhendong Pharmaceutical)</th>
<th>Yabao pharmaceutical (REN Wu-xian)</th>
<th>ZHANG Xue-feng (Qinghai Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Still shares holding ratio</td>
<td>Chairman and president</td>
<td>Chairman and president</td>
<td>Chairman, legal representative and</td>
<td>President, chief designer,</td>
</tr>
<tr>
<td>accounts for 19.94% of general</td>
<td></td>
<td></td>
<td>director</td>
<td>chairman, general manager,</td>
</tr>
<tr>
<td>capital</td>
<td></td>
<td></td>
<td></td>
<td>director</td>
</tr>
<tr>
<td>Shareholdings</td>
<td>The shareholding ratio accounts for 19.94% of general capital</td>
<td>Holding 99.20% shares of Shanxi Zhendong Industrial Group Co., Ltd (59.08%) which is the holding shareholder of Zhendong Pharmaceutical</td>
<td>Holding 55% shares of Shanxi Yabao Investment Co., Ltd. (18.92%) which is the holding shareholder of Yabao Pharmaceutical</td>
<td>The shareholding ratio of Xiao Rong (wife of ZHANG Xue-feng) who is the person acting in concert is 10.40%</td>
</tr>
<tr>
<td>Age</td>
<td>62</td>
<td>54</td>
<td>56</td>
<td>47</td>
</tr>
<tr>
<td>Education</td>
<td>Associate college</td>
<td>Master</td>
<td>Master</td>
<td>Master</td>
</tr>
<tr>
<td>still shares holding ratio</td>
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<tr>
<td>background</td>
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<tr>
<td></td>
<td>In 1992, went southward to Shenzhen for joint venture with Hong Kong businessman;</td>
<td>· 1993.10 up to now, Chairman and general manager of Zhendong Group; chairman of Zhendong Pharmaceutical since 2001;</td>
<td>1982.1-1986.7, technical manager of Ruicheng Pharmaceutical Factory;</td>
<td>· 1994-1998, general manager of Sichuan Zhongda Industrial Co., Ltd.;</td>
</tr>
<tr>
<td></td>
<td>In 1998, acquired Wuchang State-owned Pharmaceutical Factory and established Sunflower Pharmaceutical Co., Ltd. which has been operating ever since.</td>
<td>· 2012.12-2013.12 holding the concurrent post of general manager</td>
<td>· 1991-1993, manager of Sichuan Huaxing Co., Ltd.;</td>
<td>· In 2001, director of Beijing Dacheng Law Firm Sichuan Branch;</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>· In 2002, president of Sichuan Jiufeng Industrial Development Co., Ltd.;</td>
</tr>
</tbody>
</table>
| Personal honor                                                                 | 2001.3 up to now, secretary of the Party Committee and chairman of Yabao Pharmaceutical Group | In 2003-2005, acquired and acted as chairman of Qinghai Tanggula Pharmaceutical Co., Ltd.;  
· 2008 up to now, chairman of Qinghai Spring Medicinal Resources Technology Co., Ltd. |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| · In 2011.09, was elected as the standing vice president of Heilongjiang Chamber of Commerce in Beijing; | · In 2012.06, it was awarded the honorary title of "China Credible Entrepreneurs";  
· In 2012.09, it was awarded the honorary title of "Confucian Businessman Award";  
· In 2013.02, it was elected as deputy to the 12th National People's Congress;  
· In 2013.11, it was issued "International Health Achievement Award" by special assistant of Secretary General of the United Nations;  
In 2014, it was honored "2014 Innovation Characters" of the 7th Heath China. | · From 2011 to 2013, it was issued "China's Independent Innovation Leader" jointly by the Ministry of Science and Technology and the Ministry of Commerce for three consecutive years;  
· In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2011.7, it was awarded China Charity Award - the highest government  
| · In 2012.08, was elected as the vice president of Chamber of Commerce of Heilongjiang Federation of Industry and Commerce; | · In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2012.08, was elected as the vice president of Chamber of Commerce of Heilongjiang Federation of Industry and Commerce;  
· In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2011.7, it was awarded China Charity Award - the highest government  
| · In 2013.01, was elected as the deputy to the 12th National People's Congress; | · In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2011.7, it was awarded China Charity Award - the highest government  
| · It has won the honorary titles of "National Model Worker", "Shanxi Model Worker", "Shanxi Excellent Entrepreneur" and "Shanxi Re-employment Model in Placement of Laid-off Workers", etc.; | · In 2013.02, it was elected as deputy to the 12th National People's Congress;  
· In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2011.7, it was awarded China Charity Award - the highest government  
| · In 2011.7, it was awarded China Charity Award - the highest government  
| · Deputy to the 11th National People's Congress of Changzhi city and vice chairman of China Agriculture Industry Chamber of Commerce; | · In 2013.02, it was elected as deputy to the 12th National People's Congress;  
· In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· In 2011.7, it was awarded China Charity Award - the highest government  
| · It has won the honorary titles of "National Model Worker", "Shanxi Model Worker", "Shanxi Excellent Entrepreneur" and "Shanxi Re-employment Model in Placement of Laid-off Workers", etc.; | · In 2013.02, it was elected as deputy to the 12th National People's Congress;  
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| · From 2011 to 2013, it was issued "China's Independent Innovation Leader" jointly by the Ministry of Science and Technology and the Ministry of Commerce for three consecutive years;  
| *Personal honor*                                                                 | · In 2011.09, was elected as the standing vice president of Heilongjiang Chamber of Commerce in Beijing;  
· In 2012.08, was elected as the vice president of Chamber of Commerce of Heilongjiang Federation of Industry and Commerce;  
· In 2013.01, was elected as the deputy to the 12th National People's Congress;  
· It has won the honorary titles of "National Model Worker", "Shanxi Model Worker", "Shanxi Excellent Entrepreneur" and "Shanxi Re-employment Model in Placement of Laid-off Workers", etc.;  
· In 2011.7, it was awarded China Charity Award - the highest government  
| | "International Health Achievement Award" by special assistant of Secretary General of the United Nations;  
In 2014, it was honored "2014 Innovation Characters" of the 7th Heath China. | |
The above 4 cases were selected mainly according to their typicality, diversity and research convenience.

Firstly, the principle of typicality. Typical cases that could reflect the success or failure of pharmaceutical enterprises in a concentrated way were selected. Three case enterprises of Sunflower Pharmaceutical, Zhendong Pharmaceutical and Yabao Pharmaceutical have been engaged in pharmaceutical industry for a long time. In the pharmaceutical industry featured by weak periodicity, only pharmaceutical enterprises that have been operated for a long time can display relatively stable strategic guidance, and meanwhile, reflect the track of their strategic changes. The development track of Qinghai Spring was an exception. Although the company was greatly doubted, it had become a widely known enterprise with the annual sales of several billions, and had been successfully listed relying on capital operation, creating a “myth” of pharmaceutical field, but recently, it nearly suffered a “catastrophe” due to policy supervision. According to many years’ work experience of the author as a senior manager of pharmaceutical industry, the unusual development history and ups and downs of Qinghai Spring were closely related to the daring and risky personality characteristics of ZHANG Xue-feng, CEO of Qinghai Spring, and meanwhile, development history of the case enterprise also reflects the influence of external system environment as one of the important features of enterprise on strategic decision of pharmaceutical enterprise. Therefore, the author also would like to disclose the effect of CEO personality characteristics and fit environment on strategic choice and performance of pharmaceutical enterprises.

Secondly, the principle of diversity. Pharmaceutical enterprises adopt the typical management mode of “Dumbbell”, i.e., pay more attention to the management of pharmaceutical R&D and marketing in respect of management function, relatively weaken management on pharmaceutical production, and then grasp technical resources and market resources. Different pharmaceutical enterprises focus on different points in management of R&D and marketing. The four pharmaceutical enterprises selected by the author have different focuses in R&D and marketing, which reflects their difference in strategic choice to some extent; at the same time, CEO personality characteristics of the four case enterprises are diversified. Such two points ensure the diversity of case enterprises and can meet the need of research.

Thirdly, convenience of research. It is required to obtain reliable and adequate data about case enterprises and guarantee the robustness and completeness of research conclusions. During many years’ experience in pharmaceutical enterprises, the author is greatly familiar with CEOs of such enterprises as required by work, and meanwhile, the author is able to contact with CEOs and core managers of these enterprises, which is convenient for interview and research. Thus, the interview can be guaranteed objective fair and authentic, and meanwhile, the access of data can also be guaranteed.

According to different purposes of research, Yin (2003) divided case study into three types: (1) explanatory case study, which is generally used in exploration of causal relationship and illustrate the logical relationship of certain question through multi-dimensional information of the case; (2) descriptive case study, which forms a definite theoretical guide before research
and takes the guide as the theoretical framework of case description and analysis; (3) exploratory case study, which uses new perspective, assumption and method to explore certain complicated phenomenon and form new knowledge and theory about the phenomenon. This research belongs to explanatory case study and the purpose is to explain the mechanism of action of CEO personality characteristics of pharmaceutical enterprises on their strategic performance.

Case study can be basically divided into three stages. The first stage is research design and to define research questions. As to any empirical research, it is one of the most significant steps to clearly define research questions at the very beginning. These questions can be indicated by who, what, where, how and why; the second stage is data collection. As emphasized by Miles and Huberman (1994), data collection and analysis process should be recorded, and illustrated in final report. In this way, others who follow the same process in principle can obtain the same conclusion, or they will more possibly follow the process and evaluate internal logic. This is very important for demonstration of the reliability and validity of case study results (Benbasat, 1987). Multiple data collection method was adopted. One of the important advantages of case study is that it is available to collect different data to display rich pictures of the whole event (Yin, 1994). The third is data analysis stage, which includes field note, original data coding and data presentation. In the opinion of Miles and Huberman (1994), coding technology can be used to assist researchers to analyze and summarize some constructs and relations through field note and other materials, systematically present those fragment and local data, and deduce the logical relationship among data. With the proceeding of data collection and data analysis, researchers need to continuously deduce and correct the logical relationship among data and infer the research conclusion. Finally, show the research results with the method of time series analysis and mode match analysis (MAO Ji-ye and ZHANG Xia, 2008).

This topic will closely focus on effects of CEO personality characteristics on strategic choice and strategic performance of pharmaceutical enterprises. Knowledge of subjects such as psychology and strategic management will be referenced in the research and these theories will be used in CEO personality and strategic management of pharmaceutical enterprises for comprehensive research. In consideration of definite target of research, the analysis method combining theory, history and reality will be adopted in this topic, and case analysis angle will be stressed from literature research.

In case study, we selected four representative Chinese small and medium-sized manufacturing enterprises based on the diversity and convenience of case selection, and we will analyze the effect of CEO personality characteristics on strategic choice and strategic performance of enterprises through question research of the strategic change process of these representative enterprises, the cognition of CEO on key strategic decision and the function of CEO personality. Meanwhile, we will have observation on CEOs of case enterprises, directly observe and record their behaviors to capture CEO personality characteristics in a better way. During observation, the author is passive, that is to say, the author will not control or interfere the observed event or behavior. For example, during field visit on production environment,
the author didn’t visit any person but just observed the basic situation of the field and then made record for reference. The author compared the discovery and interview records to improve the reliability and quality of data.

On such basis, we will combine the research results and finally summarize and write the topic report. Specific research thought is as shown in Figure 3-4.

![Figure 3-4 Research Process and Research Method](image)

3.3 Data collection

Grounded theory is a kind of effective research method to build theoretical model based on qualitative data. In order to minimize subjective characteristics of qualitative data, the data collected in this research came from multiple channels for mutual corroboration and triangle of evidence so as to improve the reliability and validity of research. Detailed data sources include the following channels.

Source 1: semi-structured interview. Interviewees mainly include CEOs and their spouses, senior managers and secretaries, etc. Each interview lasted about 90 minutes and was recorded with consent of interviewees. Interviews were carried out by focusing on enterprise’s development, strategic choice, CEO’s growing experience and personality characteristics to grasp the strategic decision of CEO since it established or entered the company, to understand key strategic event experienced by CEO and to understand the effect of CEO personality characteristic in the strategic event. After interview on CEO, the case team also interviewed middle-top personnel of the enterprises to supplement information on the one hand and to verify the interview on CEO through multiple ways on the other hand. See Appendix for outline of interview.

Source 2: Questionnaire survey. This paper collected related data from two levels. Specifically, the data required to be collected by the organization include relevant data of external environment and national pharmaceutical policies related to strategic level of the four case enterprises and relevant materials of such enterprises; data of leader’s level mainly refer to the
evaluation on different personalities of leaders.

Source 3: Enterprises’ official website and internal documents, internal publications and internal meeting minutes, etc. Enterprises’ official website, internal publications and meeting minutes presents basic introduction, development history, annual report, important strategic decisions, social responsibilities and news of enterprise. 174 news reports in total were obtained from the four enterprises through arrangement.

Source 4: Related reports of Chinese mainstream media on operation of case enterprises. The selection criterion of media is: first, the media has online website which is convenient to retrieve news reports of different spans; second, the media belongs to mainstream media with high authority and wide influence. Searches were conducted with enterprise name as keyword through search engine of these media’s websites and news irrelevant to the research topic were got rid of by reading news titles. And then Chinese media news reports were searched through Baidu search engine with “enterprise name + CEO name” as keyword and the news less relevant to research contents was got rid of by scanning news titles. Finally, 377 news report were obtained after collation.

Source 5: Online CEO interview video. The speeches and media interview of senior managers of enterprises were searched through Baidu video search engine, videos irrelevant to research topic were got rid of by reading titles and speech contents of relevant videos were turned into word documents. Finally, about more than 60,000 characters of written records were obtained.

Source 6: Searches were conducted with “enterprise name + CEO name” as keyword through CNKI and literatures were selected by scanning titles and abstracts. Finally, more than 60 literatures conforming to this research topic were selected.

The author carried out “triangulation” on the above-collected data and data sources to ensure that they could supplement each other on evidence chain. When similar data and evidences could be obtained by different ways, the measurement in case study has construct validity.

3.4 Data analysis process

First, this paper argues that the cognition of CEO in pharmaceutical enterprise is a very important connectivity concept during strategic decision-making. CEO personality characteristics influence strategic decisions by affecting CEO’s managerial cognition. Therefore, this research will adopt the process indicated in Figure 3-5 as the basic process of case analysis. In order to describe strategic decisions of case enterprises in different development stages in detail, external environment and related strategic events in decision-making of each stage were collected for this paper to further explore the relations between CEO personality, managerial cognition and strategic choice and strategic performance. However, for the purpose of further revealing the causal and logical relationship among variables, it is essential to analyze case materials more clearly and logically. As suggested by Weick (1979), it is required to construct the cause-and-effect diagram regarding CEO managerial cognition, strategic behaviors and strategic performance and competitive
advantages of different case enterprises based on initial analysis on case materials; and then further analyze the effect of CEO personality characteristics on its managerial cognition. In this way, the research can become more systematic and the research process and conclusions can be verified.

Finally, the relation between CEO personality characteristics and strategic choice and performance was summarized based on theoretical framework and data analysis and related theoretical model was put forward.

3.5 Reliability and validity

Case researchers following scientific research must observe the reliability and validity required in the research, including construct validity, internal system, external validity and reliability (ZHENG Bo-xun and HUANG Min-ping, 2012). Controls and inspections were conducted as comprehensive as possible to improve research validity and reliability of this paper and triangulation was adopted to use various data sources (Miles and Huberman, 2010).

Firstly, in respect of construct validity, three methods were adopted in this paper to guarantee the construct validity of research. First, triangulation of multiple source of evidence. Data source includes interviews, internal documents, annual summary, internal journals and reports of case enterprises as well as external literature networks, media and journals, etc. to ensure the multiplicity of data source. Second, establishment of evidence chain. On the basis of interviews and data analysis, clear CEO’s managerial cognition and evolution of strategic behaviors of case enterprises by time sequence according to cause-and-effect diagram to make the searched data consistent and logic to some extent. Third, communicate with relevant personnel of case enterprises over and over again to ensure that this paper can reflect the discussed phenomenon and avoid personal preference of research team.

Secondly, in respect of internal validity, this paper first stated possible theories, put forward research models and series propositions, and then reviewed whether theories, propositions and research data were consistent with requirements through case analysis to ensure the internal validity of research.

Thirdly, in respect of external validity, research results were reported through industrial meetings. The case enterprises were communicated and discussed with insiders to obtain the affirmation of more people.

Fourthly, in respect of research reliability, the research database including interview recordings, interview texts, questionnaires, case enterprises’ internal and external data summary and journal articles was established for reexamination and reanalysis to strengthen research reliability (Yin, 1994).
Chapter IV Case Study

4.1 Process of case study

4.1.1 Object of study

Interviews in the case study aimed to collect and organize the viewpoints about CEO personality characteristics of pharmaceutical enterprises and their effect on strategic choice and strategic performance. In consideration of the typical “Dumbbell” management mode of pharmaceutical enterprises, the author deliberately selected 4 pharmaceutical enterprises focusing on different aspects of R&D and marketing in selecting object of study according to its many years’ practical experience in pharmaceutical industry; at the same time, CEO personality characteristics of the 4 enterprises were distinctly different. Interviews in the case study aimed to further analyze the viewpoints about effect of CEO personality characteristics on strategic choice and strategic performance by collecting and organizing strategic events of different development stages of the 4 pharmaceutical enterprises as well as the 4 CEOs’ personality characteristics.

4.1.2 Interviewees

In case study, depth interviews were carried out with 8 people from 4 pharmaceutical enterprises including 4 CEOs of and 4 senior managers working closely with them. Interviewees in this study were characterized by:

(1) Excluding CEOs, all interviewees had more than 5-year work experience as senior managers of their enterprises. They practically participated in core management strategy work, were familiar with CEOs, and had deep understanding and perception on management and innovation of transformation at certain stage;

(2) Interviewees were willing to accept interviews regarding enterprise strategic choices and CEO personality characteristics;

(3) Interviewees agreed to reconfirm the contents and abstracts of the interview and agreed to the use for academic exchange. Specific interviewees and conditions of interview are as shown in Table 4-1.
### Table 4-1 Detailed Information of Interviewees

<table>
<thead>
<tr>
<th>NO.</th>
<th>Name</th>
<th>Title</th>
<th>Company</th>
<th>Time</th>
<th>Place of interview</th>
<th>Duration</th>
<th>Number of characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LI Anping</td>
<td>CEO</td>
<td>Zhandong Pharmaceutical</td>
<td>2016.3.2</td>
<td>Zhendong Headquarters</td>
<td>1:30</td>
<td>160,053</td>
</tr>
<tr>
<td>2</td>
<td>LI Zhixu</td>
<td>Vice general manager</td>
<td>Zhandong Pharmaceutical</td>
<td>2016.3.2</td>
<td>Zhendong Headquarters</td>
<td>0:48</td>
<td>5068</td>
</tr>
<tr>
<td>3</td>
<td>REN Wuxian</td>
<td>CEO</td>
<td>Yabao Pharmaceutical</td>
<td>2016.3.1</td>
<td>Yabao Headquarters</td>
<td>1:40</td>
<td>170,134</td>
</tr>
<tr>
<td>4</td>
<td>TANG Ke</td>
<td>Vice president</td>
<td>Yabao Pharmaceutical</td>
<td>2016.3.1</td>
<td>Yabao Headquarters</td>
<td>1:36</td>
<td>150,550</td>
</tr>
<tr>
<td>5</td>
<td>GUAN Yanbin</td>
<td>CEO</td>
<td>Sunflower Pharmaceutical</td>
<td>2016.3.1</td>
<td>Sunflower Headquarters</td>
<td>1:44</td>
<td>169,580</td>
</tr>
<tr>
<td>6</td>
<td>WU Guoxiang</td>
<td>Vice president</td>
<td>Sunflower Pharmaceutical</td>
<td>2016.3.1</td>
<td>Sunflower Headquarters</td>
<td>0:45</td>
<td>5035</td>
</tr>
<tr>
<td>7</td>
<td>ZHANG Xuefeng</td>
<td>CEO</td>
<td>Qinghai Spring</td>
<td>2016.3.2</td>
<td>Company Headquarters</td>
<td>1:24</td>
<td>130,005</td>
</tr>
<tr>
<td>8</td>
<td>LIU Lingxiao</td>
<td>Marketing director</td>
<td>Qinghai Spring</td>
<td>2016.3.2</td>
<td>Company Headquarters</td>
<td>0:45</td>
<td>5420</td>
</tr>
</tbody>
</table>

### 4.1.3 Interviews and access of data

Interview process in the study included three procedures:

First, design of interview outline and questionnaire (see Appendix 2 and Appendix 3). Interviews in the study are semi-structured, i.e., interviews were led by researchers with outline. Before each interview, the interview team would discuss related questions specifically according to interviewees and questions discovered in study. In addition to raising questions, some interactions were produced in the interview for further consideration.

Second, appointment of interview time. Before each interview, the author will appoint interview time with each interviewee through phone or WeChat, etc. At the same time, interview outline would be sent to related interviewee through WeChat one day before the
interview for three purposes: ① the interviewee could know the contents and subjects of the interview in advance, so they could have adequate time to prepare and think relevant questions; ② the appointment of interview time could avoid interruption of interview process or disturbance of thought of interviewee so as to ensure the smoothness of interview; ③ appointment might make the interviewee feel respected and valued so as to increase their cooperative intentions.

Third, implementation of interview. The choice of interviewees will be given priority in selecting the place of interview. With consent of interviewee, the author and assistant could record the whole contents of interview. Generally, the interview on CEO would last about 90 minutes and the duration of interview on senior managers was slightly shorter, which was about 1 hour. After the interview was completed, CEO would be requested to finish corresponding questionnaire. Auxiliary materials of interview involved introduction to research project, interview outline, recording pen, fountain pen and notebook.

At the beginning of interview, it was required to explain the purpose and contents of interview firstly. The contents of interview on CEO was started by focusing on the current development status of the interviewee in the company and then gradually converged to key strategic events during development process of the company. The author would follow CEO’s review and share CEO’s feelings and experience, and mainly explore the key effect of CEO personality characteristics in the strategic events. The interview on senior managers of pharmaceutical enterprises was mainly to listen to the interviewee’s evaluation on CEO personality characteristics and inquire specific instances for verification, or invite the interviewee to verify major events mentioned by CEO.

Fourth, transcription of interview talks. After interview was completed, the recording would be transcribed to text information word for word and sentence for sentence. Researchers should complete abstract and Memo on that day. In the coding process later, the recording was listened to and the text was read again. Attention was paid to the tone and manner of interviewee so as to understand the real meaning of them. Meanwhile, the results of questionnaire finished by CEO were organized and analyzed.

4.2 Data analysis

Data analysis in this paper includes three stages. First, review the strategic change process of pharmaceutical enterprises. Second, analyze the formation and evolution process of managerial cognition of pharmaceutical enterprises and constructing the cause-and-effect diagram on managerial cognition and strategic behaviors evolution of case enterprises. Third, try to answer which personality characteristics of CEOs and what factors have influences on strategic choices and the action mechanism of strategic performance.

In view of the multi-case study method used in this paper, the procedures to use this method starts with selection of a case best known to researchers or one with easiest access. Then the four-step approach of Axelrod (1976) will be applied to draw cause-and-effect diagram. First, identify related sentences. Second, draw the original graphics. Third, classify concepts with
existing theoretical framework. Four, modify cause-and-effect diagram.

Table 4-2 Example for Constructing Cause-and-effect Diagram by Four-step Approach

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Sentence identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 1998, the country carried out historic reforms and a series of restructuring and transformation on oil industry. …which made the gas station network of Zhendong have no chance to compete. Zhendong decidedly sold 29 gas stations and 2 oil depots to Sinopec by RMB100 million Yuan. After acquired and restructured, the company faced transformation… In 2001, it acquired Jinjing Pharmaceutical.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Original cause-and-effect diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance feedback → facing strategic transformation → entering pharmaceutical industry</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3</th>
<th>Original concept included in existing theories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance feedback, belonging to market environment; search for new business field, belonging to managerial cognition; entering pharmaceutical industry, belonging to strategic behaviors</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 4</th>
<th>Original concept included in existing theories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market environment (performance feedback) → Search for new business field (managerial cognition) → Entering pharmaceutical industry (strategic behavior)</td>
<td></td>
</tr>
</tbody>
</table>

Data source: refer to research of Axekod (1976)

What is different among literatures such as Nadkarni and Narayanan (2005), Nadkarni and Barr (2008), Eggers and Kaplan (2009) is that cause-and-effect diagram in this paper refers to multi-case study instead of large sample data. Therefore, in the final cause-and-effect diagram, the preservation of detailed information of each sentence will be helpful for further analysis with case facts.

4.3 Case analysis I: Zhendong Pharmaceutical

4.3.1 Strategic change process of Zhendong Pharmaceutical

It has been over 21 years since entrepreneurship of Shanxi Zhendong Group, the parent company of Zhendong Pharmaceutical Co., Ltd. LI An-ping, current president of Zhendong Pharmaceutical, is also the founder of Zhendong Group. In management, LI An-ping is the president of the company, concurrently holding the post of president and general manager of Zhendong Group. From the point of strategic development, the development of Zhendong Pharmaceutical went through three important stages, and LI An-ping played a decisive role in these stages:

1. Entrepreneurship: trials in oil industry (the first stage)

Like most private enterprises in China, the birth of Zhendong also relied on a good chance which was exactly obtained by strategic vision of LI An-ping. It was just LI An-ping who
firstly discovered a new market containing huge energy, timely grasped the advantageous strategic chance to start a business and established the first private gas station in Changzhi area.

LI An-ping, the director of complex factory of Donghe Village in Changzhi County in 1992, began the construction of the first gas station – “Changjin (Donghe) gas station on April of 1993 with nearly RMB300,000 Yuan borrowed from relatives and friends. On October 1 of the same year, the gas station was formally put into operation and Zhendong Industrial Co., Ltd. in Changzhi County, the predecessor of Zhendong Group was formally established. In 1997, Zhendong became the largest petroleum products wholesale company of Changzhi area and its business was not only spread to southeastern Shanxi such as Changzhi, Gaoping, Jincheng and Lingchuan, but also extended to Anze in Jinnan, Yushe in Jinzhou and Shexian in Hebei, etc. In 1999, Zhendong Group was established; the number of gas stations reached 47 and the sales amount reached RMB664 million Yuan; these gas stations were spread over arterial traffic of provinces such as Shanxi, Shaanxi and Henan provinces and a powerful oil marketing network was formed; the Group gradually became the nationally largest private oil chain enterprise.

2. The second stage: second entrepreneurship, targeting pharmaceutical business

In 1998, the country carried out historic reforms and a series of restructuring and transformation on oil industry. The restructured CNPC and Sinopec began to control gas stations at the terminal of oil industry chain quickly and occupied the overall oil industry chain from crude oil exploration, development, storage and transportation as well as processing to sale, which made the gas station network of Zhendong have no chance to compete. In 2000, Zhendong decidedly sold 29 gas stations and 2 oil depots to Sinopec by RMB100 million Yuan. On July 18, 2000, Zhendong held the oath-taking rally for full mobilization of second entrepreneurship and formally started strategic transformation and second entrepreneurship.

Plenty of market opportunities existed in China at that time. Diversification became the common practice of many enterprises after they achieved initial success and Zhendong was one of them. During the period, Zhendong had ever established agricultural products development company and biological food company, had been engaged in corn processing and metal casting, had tried coal-to-oil industry and has even worked as sales agent of Naobaijin, however, none of these transformations succeeded. Until 2001 when Zhendong acquired Shanxi Jinjing Pharmaceutical Co., Ltd., a local state-owned pharmaceutical factory on the verge of bankruptcy, Zhendong began to be formally engaged in pharmaceutical industry. In November of 2001, the first traditional Chinese medicine injection project of Zhendong Science and Technology Park was launched officially. In the same period, the workshop for extraction of traditional Chinese medicine (TCM) was carried out GMP remote transformation. In September of 2002, compound Kushen injection of “Zhendong Brand” was successfully produced in the newly-built plant. In December of the same year, Jinjing Pharmaceutical smoothly passed GMP certification in one time and created the myth of “construction, certification and production on the very year”. In the beginning of 2003,
“SARS” raged; the production and sale of some pharmaceutical enterprises were hit and LI An-ping mobilized all sales personnel above middle level to market their drugs in various hospitals. In May of 2003, “Yanshu” produced by Zhendong Pharmaceutical was identified as one of the eight drugs for therapeutic treatment of SARS, which made “Yanshu” become the blockbuster of Zhendong Pharmaceutical at one stroke and rank among the best sales of Chinese patent medicine throughout the country.

In 2001, China entered WTO, which promoted the reform and opening of medicine and health field; from 2003, Chinese pharmaceutical field was fully opened, which brought new opportunity for the development of pharmaceutical business. Zhendong began to extend its business to pharmaceutical circulation field, and then confirmed the growth strategy focusing on expansion of commercial enterprises to become the leading enterprise of traditional Chinese medicine. In 2006, Zhendong established a retail drug store – Shanxi Zhendong Pharmacy in Changzhi County; in 2007, Shanxi Zhendong Pharmaceutical Co., Ltd. was formally established; in 2009, Zhendong Pharmaceutical obtained “GSP Certificate” and formally started drug distribution work. At the end of the same year, three-dimensional library of Zhendong Pharmaceutical logistics was established; in May of 2010, Zhendong Pharmaceutical Co., Ltd. and Shanxi Chendong Pharmaceutical Logistics Co., Ltd., a company among top three of pharmaceutical business in Shanxi Province, were restructured and Zhendong Pharmaceutical Logistics Co., Ltd. was established. After the restructuring, Zhendong became an enterprise with the largest coverage and the strongest service ability in the pharmaceutical terminal field of Shanxi Province; in 2011, Zhendong held Datong Calide Pharmaceutical Co., Ltd. and Shanxi Medical University Science and Trade Co., Ltd., which further improved the layout of pharmaceutical business of the company in Shanxi Province and formed the pharmaceutical business system of “walking on two legs of market and hospital”. At the end of 2013, Zhendong had established cooperative relationship with thousands of pharmaceutical enterprises throughout the country, built 8 branches in Tainyuan, Changzhi, Linfen, Datong, Yuncheng, Jincheng, Xinzhou and Jinzhong, and completed the 24-hour delivery system covering 11 cities and 108 counties. Zhendong also took full advantage of existing e-commerce and electronic information system, realized the transformation from traditional pharmaceutical wholesale to modern pharmaceutical logistics enterprise, and formed powerful network ability and terminal advantage through improvement of logistics chain management.

On the other hand, with constant growth of market demand, the scarcity and strategic feature of traditional Chinese medicinal materials became apparent day by day. In order to stabilize supply and release cost pressure, Zhendong established the thought of building its own traditional Chinese medicinal materials base and founded “Shanxi Zhendong Jinjing Traditional Chinese Medicinal Materials Development Co., Ltd.” (later renamed as “Zhendong Genuine Medicinal Materials Development Co., Ltd.”) in 2003. At present, Zhendong has formed four professional companies: Genuine Astragalus Membranaceus, Genuine Sophora Flavescens, Genuine Codonopsis Pilosula and Genuine Fructus Forsythiae, established five traditional Chinese medicinal materials planting (cultivation) bases, passed
the industrial chain integrating national new material medicine extraction and market sales, and became the “flagship” of traditional Chinese medicinal materials industry in the whole province.

At the time of longitudinal layout along with industrial chain of traditional Chinese medicine, Zhendong also carried out horizontal integration within the industry. In 2004, Zhendong established “Zhendong Pharmaceutical Research Institute in Beijing” and developed the R&D road of “innovation, fast follow-on and generic drug” with Beijing’s experts, information and talents advantage. In 2004, Zhendong invested more than 10 million Yuan and established Zhendong Guangming Pharmaceutical Research Institute in Beijing; then Zhendong successively established strategic cooperation relations with more than 40 scientific research institutes at home and abroad by building R&D platform and undertaking topics, etc. For example, it established the technical platform of “Zhendong Traditional Chinese Medicine Modernization Research Center” jointly with Shanxi Traditional Chinese Medicine Institute to develop new traditional Chinese medicines such as freeze-dried powder of glaucescent fissistigma root for injection, and established China-Australia Molecular Medicine Research Center jointly with Shanxi University of TCM in the University of Adelaide, Australia. In addition, Zhendong also led to establish Shanxi Strategic Alliance of Industrial Technology Innovation of Jin Medicine. So far, Zhendong Pharmaceutical has had more than 80 invention patents. However, as pharmaceutical research and development is a process with great investment, long period and high risk, Zhendong carried out a series of merger and integration actions to obtain competitive varieties and potential products under research while increasing investment in research and development: in 2004, it acquired “Wilson Pharmaceutical” located at Yangquan and more than 30 kinds of products of the company belonged to Zhendong; in 2005, it invested in the coordinated solid agent workshop which passed certification and was put into operation on that year. In August of 2007, it merged Shanxi Datong Taisheng Pharmaceutical Co., Ltd. which had 218 product approval numbers and created good performance in Shanxi Pharmaceutical Industry; on August of 2008, it controlled Changzhi Traditional Chinese Medicine Factory and restructured it to establish Shanxi Zhendong Kaiyuan Pharmaceutical Co., Ltd., which made up for the defects of Zhendong in conventional drugs of traditional Chinese medicine; in 2009, it invested in the Phase III project (life center, logistics center and ten billion tablet workshop) of Zhendong Pharmaceutical; in May of 2011, it comprehensively acquired Shanxi Anter Biopharmaceutical Co., Ltd. located in Jinzhong, which extended product line of Zhendong to digestive drugs; in 2013, Zhendong Anter successfully acquired 38 product approval numbers of Shanxi Hengshan Traditional Chinese Medicine Co., Ltd., which increased the number of product varieties of Zhendong Pharmaceutical to 548. Thus far, Zhendong Group had had four production bases of Zhendong, Taisheng, Kaiyuan and Anter, covering eight drug series.

On January 7, 2011, Zhendong Group achieved a qualitative leap. Its holding company Zhendong Pharmaceutical Co., Ltd. was formally listed in growth enterprise market (GEM) and became the first listed enterprise in GEM of Shanxi. The domestically first-class comprehensive drug production enterprise with “tumor products as core, clinical medication
of hospital as base and conventional drugs as supplement” became the new development goal of Zhendong Pharmaceutical.

3. The third stage: forming of strategy and planning of big health industry

Zhendong repositioned its development direction while realizing rapid growth in traditional Chinese medicine – it took advantage of its accumulated superior resources to step into “big health” field. In 2011, Zhendong formally launched The 12th Five-Year” Health Industry Development Plan and proposed the ambitious goal of creating health industry group and realizing ten-billion assets of Zhendong. In addition to medical products, Zhendong’s health industry covered functional food and health care products. Existing functional food business of Zhendong was started from Zhendong Agricultural Products Development Co., Ltd. established by chance and Zhendong Luweite Biological Co., Ltd. established during trial and error of second entrepreneurship, and then the company was integrated and renamed as “Zhendong Wuhe Healthy Food Co., Ltd.” At present, “Wuhe” products have covered diet therapeutic paste, porridge, soup, tea, crude fiber and other organic, green and healthy functional food, and obtained HACCP certification and QS certification of international food quality and safety system as well as 14 varieties’ organic minor grain crops certification issued by National Center for Organic Certification. In 2003, “Zhendong Wuhe” was awarded as “Famous Trademark in Shanxi Province” again by Shanxi Administration for Industry & Commerce. Health care business of Zhendong originated from Yankang Business Division (renamed as Yangkang Business Division) established in 2003. Through cooperation with several scientific research institutions, it has successively launched series products of foot care, adult nursing, child nursing and household cleaning based on “bacteriostasis of traditional Chinese medicine”. In The 12th Five-Year Health Industry Development Plan of Zhendong Household Cleaning Products, Zhendong further clearly proposed to “develop household family-type daily health care products of traditional Chinese medicine” and planned to develop health care company to the second listed enterprise of Zhengdong Group and the leading brand of bacteriostatic health care industry of traditional Chinese medicine.

4.3.2. Relation between CEO personality characteristics and managerial cognition & the strategic choice of Zhendong Pharmaceutical

1. Formation and evolution of managerial cognition and construction of strategic questions of Zhendong Pharmaceutical

Formation and evolution of managerial cognition of Zhendong were significantly related to personality characteristics of LI An-ping, the founder and CEO of Zhendong. Personality characteristics of LI An-ping made his perception on external environment present certain uniqueness. External environment mainly includes market environment and system environment. Market environment refers to the environment in which enterprise products and service can be produced and exchanged, including customers, suppliers, competitors, substitutes and potential entrants, etc., while system environment refers to the environment which is featured by perfect rules and requirements, including formal systems such as laws, regulations and rules and informal systems such as specifications, cultures and ethics.
Managerial cognition at the initial stage of entrepreneurship

The formation of managerial cognition of Zhendong was influenced by personality characteristics and background of its founder LI An-ping. Before Zhendong was founded, LI An-ping had been vice director and director of complex factory of Donghe Village in Changzhi County for seven years. In October of 1992, the 14th National Congress of CPC was convened and the reform goal of socialist market economy system was confirmed. Central and local governments and relevant departments also successively issued policies and measures to promote development of non-public sectors of the economy. Changzhi County, the hometown of LI An-ping, is located at southeastern Shanxi, rich in coal resources and one of the 100 key coal-producing counties throughout the country. LI An-ping noted that “Changzhi section of 207 national highway was about to be open to traffic. By the moment, there would be tens of thousands of coal trucks running to and from Changzhi. Oil consumption would be necessary in case of vehicles, therefore, profits pouring in from all sides would be realized if gas stations were established, wouldn’t it?”. Although LI An-ping knew nothing about gas station, and even had no notion of oil types, he borrowed RMB300,000 Yuan from friends by virtue of good relations with people and established the first gas station of Zhendong Group.

When Zhendong was just established, although strategy was still not a clear concept, the company had developed the first five-year plan, definitely put forward the development goal of “the first year for foundation, the second year for grand action, the third year for a new stage, the fourth year for scale and the fifth year for first-class joint-equity enterprise in the county”, and meanwhile, launched a series of corresponding implementation methods and measures. This bounding development thought firstly made Zhendong win the reliability of suppliers and customers. At that time, domestically large state-owned oil companies would not work with private enterprises generally. Therefore, building its own oil channel was the first problem to be solved after Zhendong was established. LI An-ping visited Shanxi Office of Xinjiang Tuha Oilfield Sales Company of CNPC time and again. After moved by perseverance of LI An-ping, principal of the Office came to Zhendong. Although the gas station is ordinary, the principal decided to cooperate with Zhendong, because “it is a small company, but the first five-year plan on the office wall displays the ambition of manager LI”.

In November of 1996, Zhendong established its first oil depot through joint operation with Tuha Oilfield and the annual throughput was 5,000 tons. At the same time, Zhendong took the measure of “Name first and supplement later” to realize rapid expansion. In 1995, Zhendong prepared to build its second gas station. However, the gas station was not called the second gas station, but “the fifth gas stations”. The second, third and fourth gas stations would be supplemented in later development. Similarly, the newly-built sixth gas station was called “the tenth gas station” and the newly-built eleventh gas station was called “the eighteenth gas station”.

Seen from the growing experience of Zhendong at the initial stage of entrepreneurship, its rapid growth was closely related to the personal experience of LI An-ping and his adventurous and persistent personality characteristics. LI An-ping mentioned in the interview that he liked
to be “leader of children” from childhood. Although he graduated from junior middle school, he had been vice director and director of complex factory of Donghe Village in Changzhi County for seven years, and meanwhile, he developed the five-year strategic plan in the initial stage of entrepreneurship, which demonstrated the desire of LI An-ping to realize high achievement. In essence, the entrepreneurship refers to the transformation from high achievement motivation to economic growth. Individuals with higher achievement motivation will have a higher desire to obtain economic return through entrepreneurship (McClelland, 1961). Therefore, when the chance of entrepreneurship with certain risk appeared, LI An-ping was excited and highly stimulated by such environment. Meanwhile, seven years’ work experience also made LI An-ping have keen insight on business opportunities, good at adjusting various environments and take advantage of various opportunities to innovate and do the best. On the other hand, LI An-ping was born in Shanxi. The success of Shanxi merchants in Ming-Qing dynasty depended on a kind of special spirit conscientiously and unconscientiously played by them under certain historical circumstances and such spirit included entrepreneurial spirit, professional dedication and group spirit which could be called “Shanxi Merchants Spirit”. Such spirit was also infused into the business sense, organizational management and mental quality of LI An-ping as a “Shanxi Merchant”, which made him have extremely strong pioneering spirit and promoted Zhendong to put forward the first five-year strategic target of “establishing the first-class joint-equity enterprise in the county within five years”. Meanwhile, he adopted the development strategy of “Name first and supplement later” to realize rapid expansion by self-forcing. It could be seen that at this stage it was just LI An-ping’s growing experience (such as less education background) and adventurous personality characteristics that promoted Zhendong to focus on “scale expansion”.

(2) Performance feedback: forward strengthening of cognition on scale expansion

According to strategic leadership theory, the observable experience, values and personality characteristics of senior managers will influence their explanation on existing situations and then influence strategic choice of their enterprises. The match between managers and organizational strategies will finally determine organizational performance. In this case, the success of Zhendong in trial of oil industry was greatly related to market environment on that time. In fact, as to oil industry closely related to transportation, the year of 1993 was a greatly essential time node in which the highway construction of China entered rapid development period. While LI An-ping’s growing experience and personality characteristics made him perceive the huge chance hidden in the environment and adopt bounding development strategy featured by stronger exploration. Under the market environment on that time, Zhendong realized growth by developing and occupying new market and became the pioneering power leading industrial development. According to MS strategy classification, the strategic choice of Zhendong at the stage belonged to exploratory strategy. Such exploratory strategy was perfectly matched with the market environment on that time and finally improved the performance of Zhendong. Therefore, it took Zhendong less than ten years to realize bounding growth from the establishment of the first gas station to the oil depot with
annual throughput of 5,000 tons and then to the powerful oil sales network. Such bounding
development strategy played a decisive role in the rapid growth of Zhendong and further
strengthened Zhendong’s managerial cognition of “scale expansion”.

(3) The first change of Zhendong’s managerial cognition

① Acquire pharmaceutical enterprises

Exactly when the business of gas stations booms, two powerful oil groups of CNPC and
Sinopec entered the market and began to compete with gas stations of LI An-ping for market,
which greatly threatened Zhendong’s network of gas stations, and pressurized Zhendong’s
profit and living space. LI An-ping realized that it was just like an ant trying to topple a grant
tree for a private enterprise with tens of millions of assets to compete with powerful CNPC
and Sinopec for market. Therefore, Zhendong had to find a new business field for continuous
development. At this moment, Zhendong’s managerial cognition was changed to how to
search for new business field from scale expansion at the initial stage of entrepreneurship.

The focus to search for new business field was firstly presented in LI An-ping’s causal logic
of “opportunity – diversification”. Such diversification thought of LI An-ping was influenced
by the first round of diversification wave of Chinese enterprises, because it was the general
practice of many enterprises under that market environment after initial success. In this period,
Zhendong explored its own development road in every trial and error.

In fact, after initial development of Zhendong, LI An-ping put forward the strategic
conception of “diversified operation and ultra-convention development” and tried to expand
different business fields, however, none of them succeeded. The most typical project was core
processing. Whereas corns were abundant, there was no need to consider raw materials and
Zhendong decided to produce maltose oligosaccharide. When LI An-ping went to Provincial
Planning Commission for approval, he was told that there had already been many factories
like this in Shanxi and it might not be profitable to invest in such project. However, LI An-
ping who had invested RMB2 million Yuan for site selection, design drawing and
procurement of equipment was not reconciled. Therefore, Zhendong invested nearly another
RMB2 million Yuan for market research, but the result was frustrating: there were 30
producers of maltose oligosaccharide within 700km of radiation radius with Changzhi as the
center and the annual throughput was 80,000 tons while the market demand was only 10,000
tons. When recalled these strategic transformations, LI An-ping also mentioned that
“decisions couldn’t be taken for granted and the RMB4 million Yuan was an impressive
lesson.” According to negative feedback of performance, LI An-ping realized that strategic
decisions couldn’t be made blindly.

When Zhendong was widely engaged in strategic trials for second entrepreneurship, related
department of the government of Changzhi County hoped Zhendong to acquire a local state-
owned pharmaceutical factory on the verge of bankruptcy – Shanxi Jinjing Pharmaceutical
Co., Ltd. For Zhendong, it was a completely unknown industry, and founding members of
Zhendong were doubtful about acquisition of Jinjing Pharmaceutical. Then LI An-ping
researched environment characteristic to examine managerial cognition. Through market
research, LI An-ping thought that the market was featured by: firstly, traditional Chinese medicine had great market space and the sales revenue of traditional Chinese medicine internationally every year was above ten billion dollars; secondly, famous doctors, medicines and drug stores had never been insufficient in the history of Shanxi; in addition, the poor operation of Jinjing Pharmaceutical was mainly caused by inaccurate understanding of market pulse and backward management mechanism, and now it was on the verge of bankruptcy due to the inability to invest in GMP (Good Manufacturing Practice) certification. What’s more, Jinjing Pharmaceutical had a exclusive protection variety and patented product of national traditional Chinese medicine – “Yanshu” compound Kushen injection. Thus LI An-ping said that: “what I bought out is a product with independent intellectual property and large market space instead of just a factory”. However, after taking over Jinjing Pharmaceutical, Zhendong was not only troubled by lawsuits, but also faced with the problems of shallow understanding of pharmaceutical industry, lack of talents and instability of personnel as well as the difficulty of GMP certification. However, in the opinion of LI An-ping, since he had chosen the project, he had to complete it even though it was hard, which reflected the strong internal control tendency of LI An-ping. During transformation, LI An-ping positively and actively solved one and another difficulties in the development of Zhendong and created the myth of “construction, certification and production on the very year” in the industry.

As it is turned out that LI An-ping’s perception on environment was successful. In 2001 when Zhendong formally acquired Jinjing Pharmaceutical, the total output value of traditional Chinese medicine industry in China was only RMB53.4 billion Yuan. By 2005, the figure had been doubled, reaching RMB119.2 billion Yuan; by 2010, the figure had even reached RMB317.2 billion Yuan and by 2015, the figure had reached RMB421.4 billion Yuan. This meant that during the period after Zhendong acquired Jinjing Pharmaceutical, the traditional Chinese medicine industry of China was in rapid growth, which provided a good opportunity for Zhendong Pharmaceutical to gradually develop core businesses of Zhendong Group.

2. Marketing by seizing an opportunity

After Zhendong Group at the stage of transformation acquired Jinjing Pharmaceutical, its development direction became clear gradually. However, with the good product “Yanshu”, how to open the market became an impending problem. What helped Zhendong to break through the marketing dilemma was the crisis event in pharmaceutical industry – “SARS”. In the beginning of 2003, SARS raged and the whole country was covered in crisis and shadow. Many pharmaceutical representatives dared not to go to hospitals and doctors didn’t want to receive them, too. When the production and sale of many pharmaceutical enterprises were hit, LI An-ping keenly found the business opportunity in it. LI An-ping took the first to lead a business team and mobilize all sales personnel above middle level to market their drugs in various hospitals. In May of 2003, “Yanshu” produced by Zhendong Pharmaceutical was identified as one of the eight drugs for therapeutic treatment of SARS. As predicted by LI An-ping, crisis was just the opportunity covered by risk. As long as you faced the difficulty bravely, you could realize real development.
(4) Establishment of new managerial cognition – longitudinal and horizontal integration in the industry

① Layout of industrial chain of traditional Chinese medicine

In 2001, China entered WTO, which promoted the reform and opening of medicine and health field; therefore, Zhendong entered pharmaceutical industry in the period when the pharmaceutical market in China was most fluctuant and the degree of pharmaceutical reform was the greatest. From 2003, Chinese pharmaceutical field was fully opened, which brought new opportunity for the development of pharmaceutical business. In the opinion of LI An-ping, drug manufacturing enterprises in the past focused on production, neglected and invested less in logistics. If all participants (manufacturers, wholesalers, retailers and consumers) of sales channel were integrated for integrative management, it would be beneficial to lower cost of logistics, improve logistics efficiency and service level and ensure the rationalization of pharmaceutical logistic behaviors. Under such managerial cognition, LI An-ping gradually formed the idea to become the leading enterprise of traditional Chinese medicine in Changzhi Area and confirmed the growing strategy by focusing on the expansion of pharmaceutical circulation field and successively acquired and restructured or established several pharmaceutical logistics and retail drug stores.

On the other hand, with constant growth of market demand, the scarcity and strategic feature of traditional Chinese medicinal materials became apparent day by day. Under such environment characteristic, LI An-ping realized that, in order to stabilize supply, release cost pressure and ensure product quality, it was required to accelerate the upstream integration. Therefore, Zhendong built four professional companies: Genuine Astragalus Membranaceus, Genuine Sophora Flavescens, Genuine Codonopsis Pilosula and Genuine Fructus Forsythiae, established five traditional Chinese medicinal materials planting (cultivation) bases, passed the industrial chain integrating national new material medicine extraction and market sales, and became the “flagship” of traditional Chinese medicinal materials industry in the whole province.

② Integration in the industry

Supported by the concept of “first-class enterprises focus on the future, second-class enterprises focus on today and third-class enterprises focus on yesterday”, Zhendong established the “brain trust” composed of scientific research, economic and marketing experts. Suggested by brain trust, Zhendong established “Zhendong Pharmaceutical Research Institute in Beijing” in 2004 and developed the R&D road of “innovation, fast follow-on and generic drug” with Beijing’s experts, information and talents advantage. However, pharmaceutical research and development is a process with great investment, long period and high risk; the research and development period of innovative patent of traditional Chinese medicine is generally over 10 years, therefore, Zhendong carried out a series of merger and integration actions to obtain competitive varieties and potential products under research while increasing investment in research and development. Meanwhile, in terms of the whole industry of
tradition Chinese medicine in China, it had been in the state of many, small and scattered for a long time, and lacking competitiveness. Low concentration of industrial environment made Zhendong establish the managerial cognition to improve self-competitiveness through horizontal integration in the industry. Under such managerial cognition, Zhendong started a series of merger and integration actions, which not only expanded scale of Zhendong, but also increased the number of product varieties of Zhendong Pharmaceutical to 548.

(5) Positive feedback of performance

The failure of diversified operation at the first stage and over ten years’ operation experience in pharmaceutical industry made Zhendong realized that it was necessary to get rid of the diversification strategy implemented many years before and transform it to strategic focus; resources and abilities were mainly put into pharmaceutical industry and good performance was achieved. On January 7, 2011, Zhendong realized a qualitative leap. Its holding company Zhendong Pharmaceutical Co., Ltd. was formally listed in GEM and became the first listed company of Shanxi Province in GEM.

Comprehensively speaking, the strategic choice of Zhendong in this stage was defensive and forward-looking, that is to say, the strategic choice of Zhendong was between the types of foresight and defense, because Zhendong at this stage not only focused on existing market with “Yanshu” product as core for stable profit, but also considered current market environment to discover market opportunities. We think it was related to personality of LI An-ping and negative performance feedback of Zhendong at the first stage to some extent. At the first stage, the failure of Zhendong in diversified operation made LI An-ping realize the risk in diversified development. In the interview, LI An-ping mentioned more than once that “I think the risk of diversified operation is great”. LI An-ping’s personality characteristics of good at learning and summarizing made him find out that Zhendong couldn’t expand blindly. Therefore, a series of merger and integration actions of Zhendong at this stage had never broke away from pharmaceutical industry.

(6) Another change of managerial cognition

In recent years, influenced by the slowdown of economic growth and industrial policy of China, pharmaceutical industry has entered the low-speed increasing period. In the future, uncertain pharmaceutical reform, drug bidding policy, drug price reduction and quality standardization of traditional Chinese medicine will significantly influence drug sales and competitive pattern of pharmaceutical enterprises. As to such institutional environment, LI An-ping thought “the adjustment direction of national policy may not be too beneficial to pharmaceutical enterprises, especially to those with famous and expensive varieties, but may be beneficial to those with second-line drugs, middle-class drugs and conventional drugs”. Under such managerial cognition, Zhendong Pharmaceutical thought that the future policy wouldn’t be beneficial to the development of the enterprise with “Yanshu” as leading product, therefore, it was necessary to “search for new profit increasing point by focusing on pharmaceutical industry”. Thus, Zhendong emphasized that one of the key operations of it in the future was consistency evaluation of generic drugs to enjoy policy benefit of market
exclusivity and drive the development of conventional drugs; meanwhile, it should confirm the development mode of “innovation + first generics + secondary development + export” and emphasize the development of prescription drugs through deep research and secondary development of key varieties like Yanshu.

Meanwhile, based on the cognition that the future big health industry is becoming the new growth point of China, Zhendong expanded its new profit increasing point to big health industry to prioritize functional food business and health care in addition to pharmaceutical enterprises. Such strategic decision was based on the cognition on current market environment and existing resources and abilities of the enterprise. On the one hand, at the initial stage of entrepreneurship, Zhendong had established Agricultural Products Development Co., Ltd. and Luweite Biological Co., Ltd. (later renamed as “Zhendong Wuhe Healthy Food Co., Ltd.”) to have a try in food business, however, due to lack of clear positioning of products, Wuhe Company had always been unable to open the market and its profit was extremely low or even couldn’t make ends meet. Although different opinions appeared in the company, LI An-ping believed that food processing industry would be a promising, resourceful and advantageous industry. Therefore, a series of reforms were carried out to Wuhe Company. Firstly, products of the company were organized and positioned. Wuhe Company launched functional food suitable for healthy and sub-healthy groups. Then the company focused on improving brand image of products. It not only tried to improve product quality by upgrading and transforming products, implementing elaborate processing and refining production procedures, but also tried to increase product reputation by innovating sales model, applying for national and local certification of related departments and establishing Wuhe Yangshengtang. On the other hand, Zhendong also had ever been engaged in health care business and had successively launched series products of foot care, adult nursing, child nursing and household cleaning based on “bacteriostasis of traditional Chinese medicine” in recent several years.

At the stage, it could be discovered that the strategic choice of Zhendong was still defensive and forward-looking. The existing institutional environment was not clear but featured by certain dynamic nature and uncertainty. Whether referring to the business fields of Zhendong in pharmaceutical products, functional food and health care products, or the R&D strategy of secondary development and deep research, and the product strategy to rely on Yanshu to drive the development of prescription drugs and to depend on consistency evaluation of drugs to drive the development of conventional drugs, the strategic transformation of Zhendong was to hold existing market, obtain stable profit and prudently make innovation at the same time.
2. Knowledge structure characteristics of managerial cognition and enterprises’ strategic behaviors

Nadkarni and Barr (2008), Eggers and Kaplan (2009) proved that managerial cognition affects enterprises’ strategic behaviors. Cause-and-effect diagram on evolution of Zhendong environment, cognition and strategic behaviors also prove that. To further prove that enterprises’ strategic behaviors is directly determined by managerial cognition rather than external environment, Figure 4-1 displays the same managerial cognition determines Zhendong’s strategic behaviors characteristics under different environment, and different managerial cognitions determine Zhendong’s strategic behaviors characteristics under the same environment.

(1) The same managerial cognition determines strategic behaviors characteristics under different environment

According to environment characteristics, it can be divided into two phases since 1998. The
first phase is from 1998 to 2001. In that period, the reform goal of socialist market economy system was confirmed, and policies and measures were issued to promote development of non-public sectors of the economy. The second phase is from 2001 till now, during which China entered WTO and thus promoted the reform and opening of medicine and health field. It is found that from 1998 to 2001, although environment changed dramatically, Zhendong’s strategic behaviors were similar with the same managerial cognition of spotting new business areas. In 1998, the country carried out historical reforms and a series of restructuring and transformation on oil industry, which made the gas station network of Zhendong have no chance to compete. Zhendong decidedly sold oil stations to Sinopec in 2000. Plenty of market opportunities existed in China at that time. Zhendong had ever established agricultural products development company and biological food company, had been engaged in corn processing and metal casting, had tried coal-to-oil industry and has even worked as sales agent of Naobaijin, however, none of these transformations succeeded. Until 2001 when Zhendong acquired Shanxi Jinjing Pharmaceutical Co., Ltd., Zhendong began to be formally engaged in pharmaceutical industry. The above analysis proves that strategic behaviors characteristics would be the same under the guidance of the same managerial cognition determines, although with dramatically different environment.

(2) Different managerial cognitions determine strategic behaviors characteristics under the same environment

From 2001 till now, the market and policy environment is the huge potential of Chinese traditional medicine market, Chinese pharmaceutical field being fully opened, the scarcity of traditional Chinese medicinal materials, low degree of industry density, and adjustments of industrial policies. The change of CEO managerial cognition leads to the change of Zhendong strategic behaviors. As shown in Table 4-3, from 2001 to 2011, under the guidance of “emphasizing on improving competitiveness”, Zhendong entered pharmaceutical circulation field, and acquired and restricted or established several pharmaceutical logistics and retail drug stores; deployed the Chinese traditional medicine industrial chain and established three-dimensional library of Zhendong Pharmaceutical logistics. 2004 saw a series of acquisitions and horizontal integration within the industry. After that, Zhendong focused resources and ability on Chinese traditional medicine industry and successfully listed in 2011. Recently, under the guidance of spotting “new profit increasing area”, Zhendong emphasized that one of the key operations of it in the future was consistency evaluation of generic drugs, focuses on development of prescription drugs through deep research and targets big health industry to prioritize functional food business and health care. It reveals that different managerial cognitions result in different strategic behaviors even under the same environment.
Table 4-3 Comparisons of environment characteristics, managerial cognition and strategic behaviors of Zhendong from 1998 till now

<table>
<thead>
<tr>
<th>Time Span</th>
<th>Environment Characteristics</th>
<th>Managerial Cognition</th>
<th>Strategic Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-2001</td>
<td>· Diversification</td>
<td>Searching for new business areas</td>
<td>· Tried multiple industries</td>
</tr>
<tr>
<td></td>
<td>· Oil monopoly enterprises entered</td>
<td></td>
<td>· Engagement in pharmaceutical industry</td>
</tr>
<tr>
<td>2001 till now</td>
<td>· Huge potential of Chinese traditional medicine market</td>
<td>Searching for new profit increasing point</td>
<td>· Establishing three-dimensional library of Zhendong Pharmaceutical logistics</td>
</tr>
<tr>
<td></td>
<td>· Chinese pharmaceutical field being opened</td>
<td></td>
<td>· Post integration of Chinese traditional medicine</td>
</tr>
<tr>
<td></td>
<td>· Scarcity of traditional Chinese medicinal materials</td>
<td></td>
<td>· Horizontal integration and acquo within the industry</td>
</tr>
<tr>
<td></td>
<td>· Low degree of industry density</td>
<td></td>
<td>· Consistency evaluation of generic drugs</td>
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<tr>
<td></td>
<td>· Adjustments of industrial policies</td>
<td></td>
<td>· Development of prescription drugs through deep research</td>
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<td></td>
<td></td>
<td></td>
<td>Targeting big health industry</td>
</tr>
</tbody>
</table>

3. The relation between CEO personality characteristics and managerial cognition and strategic choice of Zhendong

Though organization of strategic change behaviors of Zhendong, it is not difficult to discover that Zhendong adopted the bounding development thought in initial development period, i.e., the trial period in the oil industry. Development was realized by rapid expansion of gas stations. Such bounding development thought was actually forward-looking, which was greatly related to life experience and personality characteristics of LI An-ping. LI An-ping graduated from junior middle school and had less education background, but the “leader of children” from childhood and the post of factory director made him have extremely strong achievement need. At the same time, he grew up in Shanxi where the edification of the culture of Shanxi merchants made him have keen judgment on business opportunities. Therefore, he accurately captured the business opportunity. The initially simple and direct way of thought of LI An-ping also made Zhendong adopt relatively simple development thought of scale
expansion in the initial period of establishment and such development thought was matching with the market environment at that time.

After Zhendong completed the original capital accumulation through expansion and influenced by the diversified wave, LI An-ping, put forward the development thought of diversified operation and invested in several industries irrelevant to oil, which was related to the adventurous personality of LI An-ping (as indicated by questionnaire survey, the risk propensity of LI An-ping belongs to middle level). However, under the managerial cognition of diversified thought, it was not successful to enter several industries, which made LI An-ping realize that it couldn’t be taken for granted in decision-making and the risk of diversified operation was great. Therefore, it was necessary to establish the thought of specialized operation. Before merging Jinjing Pharmaceutical and entering pharmaceutical industry, LI An-ping thought it was a good chance of transformation after detailed market research. Zhendong seized the development opportunity another time in the field not familiar to it. After the failure of diversified operation, LI An-ping transformed its decision-making way from intuitive judgment to active analysis. Seen from such decision-making process, LI An-ping had stronger openness of experience and he kept great openness in the way of decision-making. In the opinion of the author, such openness of experience was of great significance to the change of managerial cognition and strategic behaviors of Zhendong in follow-up development.

In conclusion, whether the trial in oil industry or pharmaceutical industry, what Zhendong emphasized was how to seize market opportunity, boldly develop and occupy new market. According to MS strategy classification, the strategic choice of Zhendong at the stage belonged to exploratory strategy.

At the second stage, under the cognition of professional thinking and improving core competitiveness, Zhendong adopted a series of strategic behaviors: such as the integration of industrial chain of traditional Chinese medicine, merger and integration in the industry. Such strategic behaviors were not only exploratory, but also defensive. The development process of Zhendong at the first stage made LI An-ping realize that it was necessary to implement strategic focus instead of blind expansion of scale, and LI An-ping adopted the analytical strategic choice. While keeping original products of pharmaceutical enterprises, obtain drug resources and improve sales scale through acquisition and then improve core competitiveness; emphasize secondary development of products in terms of research and development. The essence of such strategic behaviors balancing “stability” and “change” was the analytical strategic choice.

At the third stage, the pharmaceutical industry was confronted with industry policy adjustment and the slowing growth. Zhendong shift its managerial cognitive focus to “searching for new profit increasing point”. At this stage, the strategic choice of Zhendong was also analytical type: while keeping the development of original prescription drugs of pharmaceutical enterprises, drive the development of conventional drugs though consistency evaluation of drugs; persist in secondary development of products; in addition, utilize original resources and abilities to explore the business of functional food and household care.
Based on the above analysis, the author thought that the transformation process from exploratory strategy of the first stage to the analytical strategy of the second and third stage was closely related to the openness of experience in personality of LI An-ping. CEO with high openness of experience would keep open and exploratory attitude on new experience. People with high openness would automatically accept new concept and have active imagination and good divergent thinking. They have great interest in obtaining knowledge and meanwhile, keep great openness in accepting and accommodating the newest and even the non-traditional concept. Therefore, even Zhendong also carried out scale expansion at the second stage, it never gave up the large pharmaceutical industry. In the interview with LI An-ping, he mentioned more than once “the importance of learning and accepting new knowledge on CEO”. Meanwhile, the progressive spirit of Shanxi Merchants of LI An-ping and his adventurous personality characteristics made Zhendong’s strategic choice of the three stages always be forward-looking to some extent.

4.4 Case analysis II: Sunflower Pharmaceutical Group

4.4.1 Strategic change process of Zhendong Pharmaceutical

Sunflower Pharmaceutical Group Co., Ltd (hereinafter refers to as Sunflower Pharmaceutical) in Wuchang City, Heilongjiang Province grew out of State-owned Wuchang Pharmaceutical established in 1966. Guan Yanbin was the Chairman and President. Sunflower Pharmaceutical experienced several critical stages from the perspective of strategic development:

1. Stage 1: Purchase and reform

State-owned Wuchang Pharmaceutical saw the decline of profits since 1993, and was on the verge of bankruptcy at the end of 1997 due to serious management issues. On April 29, 1998, Guan Yanbin, without any experience in pharmaceutical industry, purchased Heilongjiang Wuchang Pharmaceutical with 11 million Yuan.

Guan Yanbin realized that mismanagement threw Wuchang Pharmaceutical on the verge of bankruptcy; management was the weakness and marketing the bottleneck. Besides dedicating to improve internal management, Guan Yanbin spent a lot hiring experienced professional manager who had been the director for several years in foreign capitalized pharmaceutical companies to be the deputy manager and teacher.

There were 16 salesmen at the time of the transformation. Guan Yanbin and the deputy manager disagreed on the appointment of these salesmen. The deputy manager thought that they had been getting slack and fooling around, and were poorly educated, thus the most difficult to regulate; and that to break through the bottleneck, they had to be replaced with educated professional managers. However, Guan Yanbin believed that they were experienced in selling, and the most important, they were familiar with the company and products, especially the market, therefore they were indispensable to Sunflower.

Guan Yanbin appointed these 16 salesmen as leaders of region market, and also sent medium- and high level leaders to be sales staff. It was these pioneers that expanded markets in
Zhejiang, Anhui, Hunan, Sichuang, Guangdong, Gansu, Qinghai, Xinjiang provinces. By 2001, Sunflower sales volume had increased over 300% for four consecutive years, earning the title of “Magic Sunflower Phenomenon”. Since then, Sunflower extricated itself from a difficult position and started to distribute to the national market.

2. Stage 2: Adopting portfolio marketing to start national distribution

The stimulation of a single region market contributes to the great increase of sales when the company hasn’t expanded too much. However, with the development and expansion, the stimulation of a single market cannot afford sales increase. Guan Yanbin pointed out that, “we summarize marketing modes of Chinese pharmaceutical market to four modes, namely advertising with the core of educating consumers, prescription drugs marketing with the core of educating doctors, conventional drugs marketing with the core of huge-crowd strategy, and sales agent marketing, which is adopted by many small companies. The advantage of it is to integrate social resources with little investment, while the pitfall is that it is hard to realize expansion.” Sunflower Pharmaceutical integrates the mentioned four marketing modes and comes up with the unique portfolio marketing of “guerrilla tactic of advertising-driven, prescription-led, and OTC-driven”.

Sunflower passed GMP certification in 2003, and ISO9001 certification in 2004. It produced 8 dosage forms, including tablets, pills, capsules, cream, oral solutions and etc., and 103 varieties of “Quasi” drugs, establishing completed Sunflower series products. Products have been rewarded as “Heilongjiang Province Brand Product” in 1992, 1998, 2001 and 2003. Sunflower lever tablets won two National Silver Medals (Gold Medals suspended) and over 18 awards at home and abroad. It was recognized as the first choice in liver and gallbladder disease treatment in 2001, and ranked as “2011 National Best-selling Well-known Product” by the National Bureau of Statistics Center.

In 2002, Sunflower liver tablets, Weikangling capsules, Children Cough Oral Solution were recognized as “Certificated Trustworthy Product” by the China Quality Certification Standards Association.

Products sold well in China, with lever tablets taking up to 82% market shares, Weikanglin capsules 67%, cough oral solution 100%. It set up sales office in 27 provinces, municipalities and autonomous regions.

3. Stage 3: Little “Sunflower” strategy confirmed

Facing the financial crisis in 2009, Sunflower Pharmaceutical Group combed situations of Chinese pharmaceutical market, and found the missing of leading brand in medication for children, especially the need of regulations in children medication in “breath, digestion and nourishment” systems. Therefore, Sunflower Pharmaceutical, based on the foundation of famous brand of “Sunflower Pharmaceutical”, confirmed the strategy to establish the “Little Sunflower” sub-brand trademark to enter into the children medication market. Boasting as “the most quality-assured, the safest and the most effective” medication for children, the production and sales of “Little Sunflower” were priorities of the company to establish the
sub-brand systematically.

With the strategy confirmed, questions sprang up like what the product structure would be, what the strategic role of each product should be, what strategic task each product should shoulder, how to launch them to the market properly, and etc. Sunflower Pharmaceutical can only maintain its leading advantages when these questions are properly addressed. It is necessary to think about issues related to “types” first and “varieties” later. The nature of “types” is the “brand”. Brand of types can solve the sustainable development issue. Therefore, Sunflower first planned product structure of all types and targeted at cough medicine and digestive medication for children to expand the two main sub-markets. The first flagship product Children Cough Oral Solution shouldered the task to establish the brand platform and to promote sales of Little Sunflower breath medication. The second competitive product, Children Digestive Oral Solution, had the task to complement to Children Cough Oral Solution, thus consisting of the medication series for children. Second, Sunflower developed various medication for children, gradually setting up the product structure of Chinese leading brand for children medication. At last, taking advantage of the increasing influence of Little Sunflower and health foods launched step by step.

Besides the brand strategy of “Little Sunflower”, Sunflower Pharmaceutical further launched the brand of gynecological drugs (the company's exclusive variety Kangfu suppository as the leading product, combining self-and OEM agency approaches to promote the entire gynecological product group growth) and “Blue” adult cold medicine brand. “Little Sunflower”, gynecological medicine brand and “Blue” adult cold medicine brand together formed the Sunflower brand.

4. Stage 4: Establish the medium-long development plan of “promoting resource integration and creating the whole industry chain competition”

After 18 years’ hard work, Sunflower Pharmaceutical was ranked among “Top 100 Enterprises of Chinese Pharmaceutical Industry”, “Top 50 Enterprises of Chinese Pharmaceutical Growth” and “Top 20 Enterprises of Chinese Listed Pharmaceutical Companies” in 2014, and was successfully listed in Shenzhen Stock Exchange on December 30, 2014. It established the long-term strategic goal— to “gain three billion in five years, and ten billion in ten years”, and achieve 10 billion Yuan by 2018, create a Sunflower empire over 10 billion Yuan based on pharmaceutical industry. Sunflower Pharmaceutical put forward the medium-long development plan of “promoting resource integration and creating the whole industry chain competition” in 2014. On one hand, speed up to carry out the external acquisition strategy which “types” are of paramount importance; take use of capital leverage to complete product structure via acquisition and equity cooperation. On the other hand, extend the front end of industrial chain to GAP base and the back end of industrial chain to pharmaceutical business and terminal chain pharmacies based on enterprises of pharmaceutical industry, and to transform the module competition to the whole industrial chain competition. Under the guidance of such strategic plan, Sunflower Pharmaceutical successively acquired
Longzhong Pharmaceutical in Xiangyang, Hubei province, Jingding Pharmaceutical in Wudang, Wanyuan Pharmaceutical in Shenzhen and Jianjin Pharmaceutical in Jinlin province, and Hongqi Pharmaceutical in Guizhou province in recent three years. By December 2015, there was 21 subsidiary companies altogether, and 5 were newly acquired, among which 3 were the second level subsidiary companies and 2 the third level subsidiary companies. In 2016, Sunflower Pharmaceutical acquired 100% equity of Sunflower Forest Inc. and made it as the platform to explore the overseas market. With this platform, it could import both advanced technologies and techniques in pharmaceutical and health field and products of big health series and of children healthcare field which meet with the development plan, and export competitive Sunflower Chinese traditional medicine series products.

Moreover, Sunflower Pharmaceutical confirmed “Big E-commerce Strategy” to extend to the end user of the industrial chain. On June 1, 2015, Sunflower Pharmaceutical set up flagship store in “Tian-mao Pharmacy” as a positive attempt to enter into the e-commerce field, to expand sales channels and to try the new mode. In August that year, it officially launched the flagship store in Jingdong.com, selling non-medicinal products like rather than medicine. In September 2016, it started channel cooperation with eyao.com.cn to direct offer brand products. However, products in the flagship store in “Tian-mao Pharmacy” were all obsolete somehow, thus the “Big E-commerce Strategy” failing the expectations. It was reported that Sunflower Pharmaceutical’s “Big E-commerce Strategy” met obstacles.

4.4.2. Relation between CEO personality characteristics and managerial cognition & the strategic choice of Zhendong Pharmaceutical

1. Formation and evolution of managerial cognition and construction of strategic questions of Sunflower Pharmaceutical

Strategic behaviors of enterprises are influenced by perception, understanding and interpretation of strategic decision makers to the internal and external environment. While decision makers’ interpretations to events and results display selfish bias, and are influenced by their cognition levels, experience and background. Therefore, decisions on strategic events from decision makers’ (CEO included) are affected by their knowledge level, experience, background and cognition style. Moreover, the cognition style bears obvious personality characteristics of decision makers. Formation and evolution of managerial cognition of Sunflower were significantly related to personality characteristics of its CEO Guan Yanbin.

(1) Managerial cognition at the initial stage of entrepreneurship

The formation of managerial cognition of Sunflower was influenced by adventurous and composed personality characteristics of its CEO Guan Yanbin. Meanwhile, he has keen insight on business opportunities. The first spring in 1979, spotting the promising future of the reform and opening up, Guan Yanbin resigned the office job and became the director of small brick factory which was on the verge of bankruptcy. He started with the 5000 Yuan raised fund to transform the factory to produce plastic products, with the capital of a outdated machine which was disused by other factories. After only five years, the unknown small factory had developed into a famous company in the local county. In 1985, he, the first one in
Songhua River region, imported advanced equipment from Italy with bank loans. Gradually the company turned into the pillar enterprise of Wuchang County and leading enterprise of plastic industry in Heilongjiang Province. In 1989, it was promoted to the National 2nd-level Enterprise and State Designated Agricultural Film Production Enterprise.

In response to industrial enterprises system reform and transforming factories to companies put forward by central government in 1994, Guan Yanbin reformed the Wuchang Plastic Factory into a joint-equity company according to the law, thus becoming the first joint-equity entrepreneur in the then Songhua River region and the pioneer of transforming industrial companies in Heilongjiang Province.

The state issued related policies allowing state-owned medium and small companies to be sold to the public in 1998. Guan Yanbin responded to the reform actively again and made a correct assessment of the situation. He and 48 shareholders of Heilongjiang Changxing Plastic Ltd. together acquired the former state-owned Wuchang Pharmaceutical with 1.1 million Yuan, which had suspended operations nine months due to being unable to pay off debts with its assets, and established a privately-run joint-equity enterprise—Heilongjiang Sunflower Pharmaceutical Co., Ltd. The growing experience of Sunflower at the initial stage of entrepreneurship demonstrated Guan Yanbin’s adventurous, bold in blazing new trails and sharp-eyed personality characteristics. He takes advantage of various beneficial external environment to do the best to become the “bellwether”. Moreover, it shows the desire of Guan Yanbin to realize high achievement.

Guan Yanbin said in 2009, “I was a solider. New recruits get nervous easily hearing the sound of gunshots; while experienced veterans predict how far and from what direction the sound came. I once had fever in a business trip to Japan. After two days been hospitalized, doctors didn’t write out a prescription and insisted not until find out the reason behind fever. While if back in China, doctors, especially those inexperienced, would use antifebrile immediately, which would cover up the real disease. These two stories give me the lesson that one should be steady and calm.” That's what he said, so what he did. In the initial stage of Sunflower, he didn’t rush to reform or reshuffle the company drastically. On the contrary, after investigation and analysis, he integrated the traditional Chinese pharmaceutical marketing mode and put up the unique portfolio marketing of “guerrilla tactic of advertising-driven, prescription-led, and OTC-driven”. It could be seen that at this stage it was just Guan Yanbin’s steady, calm and composed personality characteristics that promoted Sunflower to focus on “portfolio marketing and national distribution”.

(2) Performance feedback: forward strengthening of cognition on marketing strategy at the initial stage

The portfolio marketing strategy set in the initial stage prepared the ground to national distribution. The “guerrilla tactic” was first invented in domestic medication marketing. The county and village markets presenting over 70% of national population were taken by contracting operations for single person. From racing to take possession of markets in the initial stage to today’s intensive cultivation, guerrilla forces of Sunflower are becoming
increasingly intensity and stronger. It constantly captures markets, contributing to the 
Sunflower’s success of winning by large sales network. The network has extended to the 
county-level markets and takes up to half sales of Sunflower Pharmaceutical. Each salesman 
possesses neighbouring lines equipped with automobiles, which is unique within the industry. 
Moreover, the guerrilla strategy of Sunflower was much earlier than the “third end user” 
concept raised by the industry. Sunflower has already taken up the huge market when the 
concept emerged.

Sunflower’s work on OTC end, especially the management and control of end user and POP 
promotion as well, was highly praised by insiders. Driven by advertisement, ground OTC 
team was actually advertising end of both cooperation advertisement and docking 
advertisement as well as promoting ends. That was final shot in the sales process of drugstore 
end. If taking advertisement as the air forces, then OTC would be the ground forces. 
Combining them together enhanced effects dramatically. Although Sunflower Pharmaceutical 
didn’t possess medication suitable to sell in hospitals, it was aware that prescriptions promote 
sales dramatically, thus especially setting up a team managed independently by a department 
taking control of prescription medicine selling. Since prescriptions sales contributed 
dramatically to the sales, it had been constantly strengthened.

Facing the mass products of the same type on the market, Sunflower confirmed the strategy to 
promote sales by advertising, thus focusing on the launching and purchasing of advertisement 
and promotion strategy. As for the launching mode, it chose to broadcast on provincial 
television stations; as for the purchasing mode, it let television stations bid on advertisement; 
as for promotion strategy, it insisted to cover elements like brand image, brand and functions. 
As the result, it produced multi-aspects covered, multi-dimensional and multi-functional 
advertising.

Guan Yanbin once said, “The Sunflower brand has already been known to all when domestic 
companies started the establish and promote their brands; our OTC end has already taken 
domestic market and gained great profits when other companies started to compete ends; our 
sales teams have already experienced battles and gained much more experience when other 
companies started to hire personnel to flood into the battle for the third end. Take the sales of 
lever tablets as an example, it is the portfolio marketing that leads to the increase rather than 
decrease of profits after advertisement of it suspending for over four years. Of course, many 
other factors should also be taken into consideration, but the insistent on portfolio marketing 
is undoubtedly the vital one.” All of these strengthened the managerial cognition of “portfolio 
marketing and national distribution”.

(3) The first change of Sunflower’s managerial cognition

① Chain effect and marketing control

In response to the disorderly competition resulted from price competition, Sunflower 
launched “marketing control” since 2004 to impose strict controls over volume and price on 
dealers, so as to ensure all dealers the reasonable profits.
Sales team of Sunflower consisted of five levels, the highest of which is the provincial agent and the lowest is the terminal manager. When taking use of the mature sales channel of dealers at any level, agents of all the five levels, including the drugstore, was allocated certain profits. Once a single agent contravened regulations on price to decrease profits presumptuously, it would be kicked out and the contract terminated. At present, Sunflower has the modern marketing network with 127 provincial offices, over 200 first-level agents, over 2000 second-level agents and over 100,000 sales terminals. All drugstores hire local full-time staff. In addition to face to face product introduction and recommendation to customers, they also create positive atmosphere for selling points and undertake price maintenance. It is the sophisticated terminal sales mechanism that enables Sunflower to remain relatively stable in the event of price competition.

（2）Marketing by seizing opportunities

Being brand’s core value, the main body of the brand assets allows consumers to clearly identify and remember the brand’s interests and uniqueness. Core value is the ultimate pursuit of the brand, the basis of brand marketing. That is to say, all the activities should work for promoting the core value, should demonstrate and display the core value, and should enrich and strengthen the core value.

From the lever tablets, Sunflower gradually established and developed the brand. Making “quality medicine for the public” as the core of brand promotion and marketing increases brand recognition. However, Sunflower is facing various challenges. At the beginning of 2002, the state regulated drug market and prescription drugs for liver were not allowed to advertise. At that time, the phenomenon of “the more investment in advertising, the more return” prevailed in domestic pharmaceutical industry. Therefore, the regulation posed serious challenges to the Sunflower’s competitive product—liver tablets. What’s worse, more than 30 types liver tablets emerged to compete for the market.

The continuous expansion and increasing varieties brings new challenges to Sunflower. In recent years, the national medical system reform, drugs classification management and the implementation of medical insurance system for instance, together with the increased consuming awareness of self-care further encourage consumers to make choices of drugs. Drugs become increasingly accessible, especially OTCs. But drugs, after all, is a special commodity. Consumers won’t hastily make choices. Therefore, brand assurance becomes increasingly important. Moreover, with China’s accession to the WTO, varieties and amounts of imported drugs surge. Market environment has changed for ever. Competitors are not only domestic enterprises, and more challenges come from global brands.

Facing such changes, Guan Yanbin believes “the waves of change have surged forward dramatically, Sunflower, as the tradition Chinese medicine pharmaceutical enterprise, has to firmly insist on brand management in order to maintain sustainable development, be in a position of advantage in the keen competition, and put itself in an invincible position in the global market”.

The brand itself expresses producers or sellers’ promises, offering consumers the specific
characteristic, benefit and service. Sunflower endows its brand image with six kinds of meanings: attributes, interests, values, culture, characteristics and users.

① Benefits for consumers: health, safety, convenience, luxury;
② Brand values: luxury, safety, health, caring;
③ Culture: honesty, unity, pioneering, perseverance;
④ Characteristics: innovation, sincerity, commitment to excellence;
⑤ Users: middle-income patients, the general public.

Guan Yanbin mentioned in the interview, “nowadays, all the major industrial enterprises have their own brands and strategic development plans, which proves that sticking to the strategic development plan is forward-looking. Currently, our brand strength increases constantly, and our strategic development plan is adjusted timely. We will unswervingly stick to the strategic development plan”.

③ Economies of scale, combination of interaction

Another highlight of Sunflower in the first half of 2009 was the “Big Conventional Drugs” strategy, namely to establish the brand in conventional drug market. Sunflower products must be the star products among the same type if wanting the public to buy its products. Therefore, Sunflower has always been committed to “quality, efficacy, honesty, service”, and take them as the core to conduct brand building, thus brand image of Sunflower being filtering into people’s minds.

Besides the frequent and wide coverage TV advertising, Sunflower combines broadcast, outdoor advertising and automobile advertising to promote marketing. As for the promotion of “Little Sunflower”, Sunflower cooperates with hospitals, local communities, local kindergartens and other partners to perform public health education, in order to help more young mothers to understand their children and establish emotional ties with Little Sunflower to promote purchasing. The slogan advertised in the Little Sunflower Mommy Class, “mommy to remember”, not only makes mothers remember the product, but also gains recognition from children with Little Sunflower’s lovely voice.

(4) Establish new managerial cognition

① Talent strategy

Sunflower is open and active to hire talents, and has always taken the attitudes of “loving talents as treasures, cherishing talents as lives, yearn for talents as wanting of water”. Meanwhile, it attaches importance to the innovation of incentive mechanism to mobilize staff passion to the maximum. According to Maslow’s hierarchy of needs, awards are given according to different positions, employer’s characteristics and different development stages, adhere to the principle of “combining material and spiritual incentives but taking spiritual incentive as the priority”. At the same time, the high salaries, high welfare, generous rewards, heavy penalties and basic salary plus commissioned income policy, performance assessment,
and talents reservation policy make employees feel respected and pictures the promising future in a regulated competitive environment. Sunflower also sets up team-based learning community to improve learning enthusiasm through various forms of group learning, and enhance communication among employees as well. Employees receive gifts every birthday and festivals. For the newly recruited, those being competent to perform duties for over six months will be promoted. While for those have difficulties in performing duties of regional managers, they are given chances to attend trainings, but will be dismissed without delay if fail the trainings.

There are four levels of human resources reform. First, team structure adjustment. Sunflower adjusts age, knowledge and gender structure of senior management team to mix senior, middle-aged and young staff so as to update ideas, have complementary strengths and ensure continuity of management team. Supply and stabilize the backbone to make talents with a reasonable structure and complementary abilities. Second, organizational structure reform. With the development and growth as well as requirements for being listed, Sunflower reforms at the proper time to separate management, marketing and manufacturing in the form of establishing subsidiaries. Thus, each attends to their own duties, reflecting the professionalism and specialization in internal management. Third, personnel system reform. As known to all, “person” is the basis for the growth of organizations, and staff renewal is the most effective way to maintain vitality. The listing offers great potential as well as serious challenges. Sunflower learns from industry experience, carries on the fine tradition of personnel system and imports talents to redesign and implement human resources management. It only selects the most suitable talents to make everyone performs its ability and no one is abandoned. Moreover, establish Sunflower Business School to combine the talents import and internal training. At last, via symposia, strengthening project management and giving full play to the president office of coordination and directing to resolve internal conflicts and coordinate actions of all parties.

② “Purchase, modification, research and cooperation” research and development strategy

Satisfying marketing mirrors products qualified efficacy and wide market acceptance. While research and development are the fundamentals to ensure efficacy. Sunflower established the R&D strategy of “purchase, modification, research and cooperation” years ago, and has been practicing it. It confirms the idea to increase investment in research and development year by year, and strengthen abilities of independent research and development.

In terms of hardware, Harbin Research Institute and Beijing Research Institute are established, and advanced research and development equipment has been purchased.

In terms of organization construction, the three-level scientific research system is led by Harbin Research Institute and Beijing Research Institute, and is assisted by 11 institutes based on subsidiary companies. Meanwhile, it cooperates with Beijing University of Chinese Medicine, Shenyang Pharmaceutical University, China Academy of Traditional Chinese Medicine and other research institutes.

Meanwhile, update major varieties stated in the current 1074 official documents to meet with
patients’ habits and improve efficacy. Based on independent research and development, import more new products and advanced technologies, and perfect the three-level research and development system so as to improve research and development level. At present, Sunflower can undertake the development of innovative drugs, varieties updating, health food and food products. More new products will be introduced to the market with Sunflower’s constant development and implementation of R&D strategy.

③ Technological innovation

First, Sunflower innovates and optimizes the production technology, such as the secondary development of previous varieties—transform large honey pill to water pills and water honey pills to have more choices on specification and cover more diseases with marked curative effects. Second, optimize and update techniques with advanced equipment. For example, reduce duration of processes, reduce exposure time so as to reduce risk of contamination or cross-contamination as well as quality risk, and etc. Third, improve quality by employing advanced equipment, for instance, use automatic light inspection machine testing the oral liquid to decrease error margins of naked eye inspection.

With new GMP certification as the turning point, renovate existing plants and build new ones to optimize the existing process layout. Design personnel flow and logistics (production process flow) more reasonably to lower chances of overlap and jerky flowing. Meanwhile, throw major verities to automatic packaging lines to increase efficiency and reduce labor intensity as well.

Focus on competitors, conduct differential analyses from perspectives of quality, technique, quality standards, product stability within the validity period, clinical application, patients’ feedback, adverse reactions and packaging. Then come up with targeted solutions and implement them.

Place equal emphasis on efficiency and technological innovation. Without innovation, products cannot be updated or efficiency cannot be improved. As the result, product value cannot be presented, capability cannot be increased, inventory cannot be used, and profits cannot be maximized. Guan Yanbin said in the interview, “I am more concerned about the balance between efficiency and technological innovation. We have concern for domestic industry trends and the publishing of laws and regulations, such as the quality consistency evaluation of chemicals introduced recently. The Group is classifying various existing varieties. R&D team is doing related research to explore the compatibility of efficiency and innovation.”

(5) Positive feedback of performance

After 18 years, Sunflower Pharmaceutical successfully listed in Shenzhen Stock Exchange on December 30, 2014. Changing of strategies shows its strategic choice if forward-looking, defensive and exploratory. Both the published brand development strategies and R&D strategies reflect that Sunflower is able to spot business opportunities via the integrated market environment, and timely adjust strategies to develop new products and open up new
markets. The launch of “Little Sunflower” brand serves as an example. For a long while, medication for children had been ignored. There was a lack of awareness of medication exclusive for children. Children at that time didn’t have proper drugs and children health cannot be guaranteed. Sensing the opportunity, Sunflower launched “Little Sunflower” series. Later, facing the severe competition, Sunflower improves service quality constantly to maintain the leading position. All these indicate that Sunflower’s strategic choice is forward-looking, defensive and exploratory.

The calm and composed personalities characteristics enable Guan Yanbin to stay unmoved by honour or disgrace in the face of complex external environment. He stresses in the interview, “facing the fierce competition, excessive concerns are worthless. All we can do is to refine techniques, produce quality products, strengthen the brand, and be more confident and competitive. Win trust with the quality and efficacy to occupy the dominant position. Sunflower and I are never worried about threats from the market, and we are confident to respond to market changes.”

(6) Another change of managerial cognition

The current external environment for pharmaceutical enterprises is mixed with opportunities and challenges. In recent years, national medical policies are relatively unstable. The new GMP certification shock continues. The increasing stringent food and drug inspection, competition pressure from foreign-funded enterprises, and various domestic food, medicine, vaccine safety issues pose great challenges and pressure on the survival and development of pharmaceutical enterprises. Enterprises don't know how to deal with the changing, thus cost and operational risk rise dramatically. However, Guan Yanbin believes in the opportunities and hope within the cracks. First, domestic pharmaceutical enterprises have more sense of urgency facing foreign-funded enterprises, thus forcing to be more competitive. Meanwhile, domestic pharmaceutical enterprises can learn from the wider range of product varieties, advanced techniques, and scientific marketing mode and management brought by foreign-funded enterprises. Second, the second child policy indirectly increases consuming group of children medication, offering opportunities to the development of pharmaceutical enterprises for children medication or driven by children medication. Third, the deepened population aging increase health care products and drugs for the senior, promoting the big health industry and medication for the senior. But at the same time, we also notice the burden and pressure brought by population aging. We have the social responsibility to improve products quality to safeguard health of the senior and reduce social and family pressure. Last, stringent regulations and food and drug inspections severely crack down companies producing fake drugs and unqualified products, cleans up the industry environment, and increases the overall level and competitiveness of the pharmaceutical industry, offering development chances.

Facing the complicated external environment, Sunflowers confirms the development strategy of “enriching varieties as the priority, operating with unique characteristics, mode innovation and the whole industry chain competition” in critical development stages. Enriching varieties as the priority is the fundamental. The core of operating with unique characteristics is to form the unique development cluster shifting from varieties to the brand and then to the types.
Mode innovation relies on mechanism leading. The whole industry chain competition is a must choice of the integration strategy, and the strategic need to improving competitiveness. Meanwhile, the Group puts forward the marketing strategy of enriching varieties as the priority, price being the soul, academic basis being the root, talents the main body and implementation the ultimate goal. Till now, Sunflower has already had 15 formulations, 1074 government approved drug number, 2 protected traditional Chinese medicine varieties, and 20 exclusive varieties, achieving the transform from varieties to the brand and to the types in the end.

Figure 4-2 Cause-and-effect Diagram on Evolution of Sunflower Environment, Managerial Cognition and Strategic Behaviors

2. Knowledge structure characteristics of managerial cognition and enterprises’ strategic behaviors

Table 4-4 compares environment characteristics, managerial cognition and strategic behaviors of Sunflower. The development of Sunflower from 1998 till now can be divided into two stages according to environment characteristics. The first is from 1998 to 2005 with characteristics of traditional pharmaceutical marketing mode and state-owned medium and small companies open to be sold to the public. The second is from 2004 till now with characteristics of the “11th Five-Year Plan”, new GMP certification, implementation of health insurance policy, introduction of the second child policy and population aging. It is found that, from 1998 to 2004, managerial cognition of Sunflower stayed the same and strategic
behaviors were similar although environment changed. Sunflower Pharmaceutical established after the acquisition the Wuchang Pharmaceutical in 1998. It put forward the portfolio marketing strategy after the professional analysis of the traditional marketing mode. When facing the chaotic pricing situation, Sunflower started “marketing control”. It seized the opportunity to establish and develop the brand, and insisted on brand development strategy. All the above analyses show that enterprises’ strategic behaviors stayed the same under the guidance of professional managerial cognition, although environment changed dramatically.

From 2004 till now Sunflower has been in the environment with characteristics of the “11th Five-Year Plan”, new GMP certification, implementation of health insurance policy, introduction of the second child policy and population aging. The change of managerial cognition of senior managers leads to the different strategic behaviors. From 2004 to 2014, under the guidance of “increasing profit margins”, Sunflower took strategy of marketing control, brand development, “Big Conventional Drug”, talents cultivation and research and development. In recent years, managerial cognition of Sunflower changed to “increasing competitiveness” in the face of national medical policies being relatively unstable, new GMP certification, the second child policy and deepening population aging. Facing the complicated external environment, Sunflower established development strategy of “enriching varieties as the priority, operating with unique characteristics, mode innovation and the whole industry chain competition”. All these analyses demonstrate that different managerial cognition leads to different strategic behaviour even under the same environment.

Table 4-4 Comparisons of Environment Characteristics, Managerial Cognition and Strategic Behaviors of Sunflower from 1998 till now

<table>
<thead>
<tr>
<th>Time Span</th>
<th>Environment Characteristics</th>
<th>Managerial Cognition</th>
<th>Strategic Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998-2004</td>
<td>· traditional medicine marketing mode</td>
<td>professional thinking</td>
<td>· acquisition of Wuchang Pharmaceutical</td>
</tr>
<tr>
<td></td>
<td>· convention of the “15th National Congress of the CPC”</td>
<td></td>
<td>· entering pharmaceutical industry</td>
</tr>
<tr>
<td></td>
<td>· chaotic pricing</td>
<td></td>
<td>· portfolio marketing national distribution</td>
</tr>
<tr>
<td>2004 till now</td>
<td>· implementation of the “11th Five-Year Plan”</td>
<td>Increasing profit margins</td>
<td>· “enriching varieties as the priority, operating with unique characteristics, mode innovation and the whole industry chain competition”</td>
</tr>
</tbody>
</table>
3. Relation between CEO personality characteristics and managerial cognition & the strategic choice of Sunflower Pharmaceutical

In the context of strategy changing and updating, some senior managers are always able to step ahead of other managers to earlier see the necessity, direction and opportunity of strategy changing and updating, and are able to put into effective practices. Cho and Hambrick (2006) argued that managers’ attention or focus change was the prerequisite of strategic change. Companies paying more attention to the new environment and emerging fields are more likely to take advantage of the favourable opportunities to change and adopt quick responses.

In the initial development stage, Sunflower came up with the unique portfolio marketing strategy after analysing the traditional marketing mode. Later it started national distribution and realized rapid development. Therefore, its marketing strategy is analytical and forward-looking. It is closely related to Guan Yanbin’s personality and experience. He once served as secretary of the Communist Youth League Committee of Wuchang County. The political experience forged the calm and composed personality. After the Third Plenary Session of the 11th Convention, he sensed the promising future of reform and opening up. He resigned resolutely and became the director of a small brick factory which was on the verge of bankruptcy. He changed the factory to produce plastic products. After the 15th National Congress of the CPC, he once again took the pioneer to reform Wuchang Plastic Factory to a joint-equity company, becoming the pioneer in industrial restructuring in Heilongjiang Province. These experience show his keen insights on business opportunities and the strong desire for achievement. Each change echoed with the macro market environment. Therefore, in the tide of implementing the spirit of “15th National Congress of the CPC”, he acquired Wuchang Pharmaceutical and established Sunflower Pharmaceutical.

Guan Yanbin and the deputy manager disagreed on the appointment of former salesmen of Wuchang Pharmaceutical in the initial stage of taking over Wuchang Pharmaceutical. The deputy manager thought that they had been getting slack and fooling around, and were poorly educated, thus should be replaced. However, Guan Yanbin believed that they were experienced in selling and familiar with market environment, thus should be entrusted with important positions. It was later proved that he was right. It was these former salesmen that expanded markets. Meanwhile, the “guerrilla tactic” marketing strategy introduced by Sunflower created the “Magic Sunflower Phenomenon”. This process of strategy-making showed Guan Yanbin has the strong openness of experience, which left greater openness in the method of strategy-making.

Guan Yanbin showed strong senses of responsibility, patriotic enthusiasm and national sentiments during the interview. He said, “Chinese patent medicine is the national essence.”
Companies have the mission and should take the responsibility to enhance national essence and promote Chinese medicine. We developed from the basis of the former state-owned pharmaceutical, and the original brand of Chinese patent medicine shall not be totally abandoned. It can be said that we focus on researching, producing and selling Chinese patent medicine, and take it as the core to build product structure of Sunflower.” Such strong sense of responsibility has far-reaching influences on the subsequent adjustment of development strategy and product structure. For example, the development of Little Sunflower aims to safeguard the health of the next generation, which has always been the pursuit and mission of Sunflower.

No matter forsaking the government office for the business, transforming the plastic factory, or establishing Sunflower Pharmaceutical, Guan Yanbin conformed to the trend of times, and seized opportunities to occupy the market. According the MS strategy classification, strategic choice of Sunflower at that stage is the exploratory one.

In the second development stage, influenced by the external environment, Sunflower adopted the strategy of marketing control in the face of chaotic pricing. That strategy has the defensive characteristics. At that time, the emerging of many other similar products posed certain challenges. In order to maintain existing market and increase profit margins, Sunflower confirmed “brand development strategy” and “Big Conventional Drug” strategy, becoming the star products. These strategic behaviors are essentially the choice of analyzer strategy.

In the third development stage, national medical policies were relatively unstable. The new GMP certification shock continued. The introduction of foreign-funded enterprises posed great challenges and pressure to domestic pharmaceutical industry. In order to increase competitiveness, Sunflower insisted on the analyzer strategy—talent strategy to ensure everyone performs its ability and no one is abandoned; “purchase, modification, research and cooperation” strategy to increase ability of R&D; technological innovation strategy to conduct secondary development of the previous varieties, and optimize and update techniques with advanced equipment.

In summary, the transition from prospector strategy to analyzer strategy is closely related to Guan Yanbin’s personality of openness to experience and strong senses of responsibility. An open CEO is proactive in communicating long-term goals to the group, creating culture of change, thus driving the group via change to realize long-term goals. An open CEO is willing to try new things, to think about new and unconventional ideas, and to accept challenges from different voices. For CEOs with high sense of responsibility, they are more forward-looking in implementing strategies. They are adventurous, acting according to plans, active in taking responsibilities and always trying to improve problem-solving abilities. During the interview, Guan Yanbin mentioned repeatedly “national sentiments, mission and original intention”, and emphasized on “bold in exploring and occupying new markets”. Both the prospector strategy at the initial stage and the later analyzer strategy are closely related with Guan Yanbin’s openness to experience, high sense of responsibility and adventurous personalities.
4.5 Case analysis III: Yabao Pharmaceutical

4.5.1 Strategic change process of Yabao Pharmaceutical

Yabao Pharmaceutical Group Co., Ltd. (hereinafter referred to as “Yabao Pharmaceutical”) grew out of Ruicheng Pharmaceutical. Ren Wuxian serves as chairman of the Group and the party secretary. Under the leadership of Chairman Ren Wuxian, Yabao grows steadily. Yabao experienced three development stages from the perspective of strategic development, and Ren Wuxian plays a significant role.

1. Stage 1: out of the woods, out of the trough

Staff from the former Ruicheng Hospital established Ruicheng Pharmaceutical with 100,000 Yuan in February 1978. At the very beginning, bathing in the spring breeze of reform and opening up, the company grew steadily. In 1981, the output value amounted to 4.03 million Yuan, profits and taxes reached 400,000 Yuan and fixed assets achieved over 1.3 million Yuan. With the deepening of market economy system, profits decreased since 1983 because of the outdated techniques and missing of competitiveness. In addition, the director changed frequently, leaving everyone in a state of anxiety. At the end of 1990, amount of loss was over 1.2 million Yuan, leaving the company on the verge of bankruptcy. At the critical moment, 30 years old Ren Wuxian, the only undergraduate, accepted to the director. Since then, he has led Yabao embark on a difficult road to build the brand.

Facing numerous obstacles and piles of problems, Ren Wuxian is always courageous and resolute. He made sweeping reforms of previous management system and established an effective incentive mechanism. Meanwhile, he updated existing products. At that time, he predicted “Weinaoluotong” (now renamed as troxerutin) would be popular, thus rushing to Institute of Zhengzhou University of Technology to update its production technique. The updated technique contributed to Yabao’s steady development by occupying the market with low-cost and high-quality products. In 1993, cooperating with the Shanxi Institute of Traditional Chinese Medicine, he developed paediatric medicine “Magic Baby Patch” (later renamed as “Dinggui umbilical patch for children”). The new drug took off upon launching to the market, and sold well in 30 provinces, municipalities and autonomous regions.

Later, Yabao launched many other new drugs, and possessed over 100 products. In 1996, output value of Ruicheng Pharmaceutical was over 100 million Yuan, and profits and taxes of it exceeded 10 million Yuan.

2. Stage 2: marching towards capital market

Products can only be found from the market, and mechanisms shall match with the market. In 1996, Yabao made the strategic decision to be listed. Ren Wuxian believed that only by entering into the capital market can companies achieve dramatic development and expansion. And mergers and acquisitions is the “shortcut” to step in the capital market. After acquisition of local bankrupted former Yunhe Pharmaceutical, Foreign Trade Company, Plants Extraction Factory, Ruicheng Pharmaceutical started to establish enterprise groups. In January 1999, “Shanxi Yabao Pharmaceutical Group Co., Ltd.” jointly proposed by Ruicheng
Pharmaceutical and four other companies was officially established. Ren Wuxian served as the Chairman and general manager.

After the establishment of Yabao Pharmaceutical Group Co., Ltd., over 100 million Yuan had been invested to complete production lines for solid preparation, ointment, injections and traditional Chinese medicine extraction. All were equipped with advanced automatic linkage equipment, and adopted supercritical CO2 extraction equipment, ultrafine grinding, ultrafiltration and other advanced technologies. Advanced detection equipments, such as: high-pressure liquid chromatograph, gas chromatograph and infrared chromatograph.

Tablets, granules and capsules passed the national GMP certification in September 2000, ointment and injections (including traditional Chinese medicine extraction) passed in August 2001. After five years’ relentless efforts, Yabao A shares received approval from China Securities Regulatory Commission on June 21, 2002. On September 26 the same year, Yabao A shares listed in Shanghai Stock Exchange, which started a brand new chapter.

After being listed, Yabao followed the development strategy of “modernization of traditional Chinese medicine as the main body, biological and chemical medicine as two wings”. On one hand, it strengthened research and development of modernization of traditional Chinese medicine production, and built industrial park; on the other hand, it invested in building holding subsidiaries to start capital operation. The Traditional Chinese Medicine Modernized Production Industrial Park, covering 400 acres and costing 150 million Yuan, was built in Fenglingdu Provincial Economic Development Zone on May 28, 2003, and was put into use in October 2004. It invested in the holding subsidiary, Yabao Pharmaceutical Datong Pharmaceutical Co., Ltd., and completed GMP transformation. Datong’s pills, tablets, capsules, granules, powder products and syrup were approved by GMP. It established the holding subsidiary, “Shanxi Yabao Xinlong Pharmaceutical Co., Ltd.” jointly with Hubei Xinlong Pharmaceutical Co., Ltd., one of the leading domestic dealers. It established holding subsidiary “Sichuang Yabao Guangta Pharmaceutical Co., Ltd.” in Pengzhou City, Sichuan Province, 7 formulations produced by which got GMP certification in January 2004. At the same time, it funded “Beijing Yabao Qiankun Technology Co., Ltd.”. In January 2004, new drug sales branch and OTC branch was integrated to “Shanxi Yabao Pharmaceutical Distribution Co., Ltd.”. In March 2004, “Qinghai Yabao Ruixin Pharmaceutical Co., Ltd.” focusing on the wholesale of drugs was jointly established with Qinghai Ruixin Company. In April 2004, the holding subsidiary “Beijing Yabao Fangda Pharmaceutical Co., Ltd.” was established in Beijing, which focused on new drug wholesale mainly via agents and products were sold throughout the country. Recently, it purchased a 363-acre land in Taiyuan Economic Development Zone to establish “Taiyuan Yabao Xinlong Pharmaceutical Co., Ltd.”, the construction of which started on April 2, 2004. It will be put into operation by the end of this year, and will become another modernized production base of Yabao Group.

As of the present, Yabao Group controls 21 subsidiaries through capital operation and low-cost expansion, with total assets amounting to 4.25 billion Yuan, annual sales income over 2 billion Yuan, and over 6000 employees. In August 2005, Ruicheng County government gradually made a withdrawal of state-owned capital of Yabao. It completed shares splitting
reform according to requirements of China Securities Regulatory Commission in February 2006, laying the foundation for further capital operation and international competition. Yabao Pharmaceutical Group Technology Center was recognised as national certificated Enterprise Technology Center jointly by the National Development and Reform Commission, Ministry of Science and Technology, Ministry of Finance, General Administration of Customs, and the State Administration of Taxation.

Brimming with youthful vigour, Yabao in the new growth stage will continue to adhere to the development strategy of “modernization of tradition Chinese medicine as the main body, and chemical and biological drugs as two wings”, to stick to the spirit of “unity, innovation, excellence, dedication” and the principle of “devoting to health”. Yabao aims to develop into a world-class pharmaceutical enterprise, committing to the cause of human health and national welfare.

3. Stage 3: technological innovation as the core strategy and global layout

Completing integration in the second stage, the Chairman Ren Wuxian made significant adjustments—from the previous strategic plan based on existing resources to the strategic model based on market development; from the previous generic drug research and development to drug innovation and product development with unique technological advantages; from the previous single paediatric brand of drugs to children health series of products.

Different from the traditional leading enterprises, Yabao invested resources more to product innovation seeking for differential advantages rather than clinging to brand bonus. Although starting with paediatric products for diarrhoea, sales of cardiovascular and cerebrovascular drugs exceed that of paediatric drugs at present. These two fields have been listed as two major areas. In 2012, the 10th anniversary of listing, Yabao reorganized its products, and integrated all its paediatric products into “Dinggui” brand, attempting to further unlock the brand value, while cardiovascular and cerebrovascular drugs still stayed under “Yabao” brand. After confirming brand concepts, Yabao, on one hand, incorporated possessed paediatric products for cold, digestive diseases and nutritional supplements into Dinggui brand; on the other hand, enriched paediatric product lines via acquisition to cover both oral and external use medicines on digestive. Since then, brand advantages of Yabao have been unleashed.

At the same time, Yabao’s technological innovation has opened up a new world. Yabao Pharmaceutical Research Institute moved from the remote Ruicheng to the talents gathering Beijing in 2010, and shifted focus from generic drugs to drug innovation. In 2013, Yabao confirmed the development strategy of pharmaceutical products as the body and drug innovation as the core.

Under the guidance of such strategy, Yabao gradually invested the core resources into the research and development of Type I drugs, and firstly imitated drugs and generic drug with market potential. To be more specific, the focus shifts from, first traditional formulations to the new ones; second, generic drugs production to new national Type I and II drugs and high-end drugs filling gaps in global and domestic markets; third, drugs for a wide range of disease
to drugs for frequently-occurring and complicated diseases. Relocating the Research Institute was essential to the strategic transformation. It pooled R&D of all branched and subsidiaries to the Institute, realizing intensive management. Besides, subsidiaries could be more focused on production and sales. More importantly, moving into Beijing could attracted more talents with the geographical advantage of Beijing. Currently, there are 160 full-time staff in the Institute, among which, 2 are academicians, over 20 are doctors, and over 70 are masters. They would shoulder the task to conduct drug innovation.

At present, dozens of projects on research and development of chemical and biological drugs are in progress, two of which have progressed to the first clinical stage. Yabao aims to lay a solid foundation in the “12th Five-Year Plan” period, and launch new products during the “13th Five-Year Plan” period.

According to Ren Wuxian, Yabao has strength in two aspects. One is the research on transdermal patches. Besides Dinggui umbilical patch for children, Yabao boasts patches for children diarrhoea, pain-killing patches for joint swelling and pains and etc. The patch for prevention and treatment of asthma is been developing and has already been patented. Yabao is leading among domestic pharmaceutical companies in the development and promotion of new transdermal preparations. Moreover, its transdermal preparations technology team has been selected as one of the first batch of key scientific and technological innovation teams of Shanxi Province.

The other strength is the slow release control technology. Ren Wuxian said, “we have already had grasped the slow release and controlled release technologies. Our technology has been relatively stable in particular to equipment and methods of large-scale production, which is the bottleneck of the slow release control technology for most companies.” The new high-standard production line of slow-released formulations will go into production in the third quarter of 2011. The main products at present include nifedipine slow-released tablets, nimodipine slow-released tablets and Zhenju antihypertensive tablets.

“Guiyuan Tablets” Project for drugs detoxification jointly proposed by Yabao and the Chinese Academy of Military Medical Sciences has entered the Phase II Clinical Trial, and the tablet is expected to be launched in 2017. Besides, drugs for synovitis, collaboratively developed by Yabao and hospital, have entered the Phase II Clinical Trial.

In addition to independent research and development, Yabao strengthens cooperation with institutes, and aims to the research and development of treatment of complicated diseases to form its unique advantages. Yabao has technical cooperation with over 40 institutes, naming the Chinese Academy of Sciences, Chinese Academy of Medical Sciences, and Tsinghua University in chronological order, and has yielded results in drugs detoxification, and drugs for diabetes and schizophrenia. Two nanotechnology patent products for the anti-cancer and cardio-cerebral vascular diseases have entered the registration phase. The oral insulin varieties for diabetes, jointly developed by Yabao and the Institute of Biophysics of the Chinese Academy of Sciences, have achieved success for the current stage.

As for research and development, Yabao pursuits “distinctive and differentiated” innovation.
Ren Wuxian hopes Yabao’s future products will have the initiative. Dr. Wang Peng, President of Yabao Pharmaceutical Research Institute, said, “we focus on three major areas, namely paediatric drugs, cardio-cerebral vascular diseases treatment and tumor treatment. The new product strategic layout is planned, emphasizing on the innovation on contemporary traditional Chinese medicine preparations, 24 hours slow-release chemical preparations and biological preparations, assisted by health food, and supplemented by health products.”

In addition to seeking for innovation in the pharmaceutical field, Yabao looks for opportunities in global markets.

Actually, Yabao started three major international projects in 2007, namely the establishment of Yabao biological drugs production line in Beijing, the establishment of slow-release preparations production line in Fenglingdu Yabao Industrial Park, and the establishment of six raw materials production lines and one production line of high-end plastic bottles for medicinal use. All these projects have been completed and passed national GMP certification of new edition. In late December 2013, biological solid preparations production line of Yabao Pharmaceutical Beijing Yabao Biology Co., Ltd. officially passed USA's FDA certification. Slow-release preparations production line passed the EU’s GMP certification in mid-May. By that time, Yabao has had the passport to access to the international high-end markets, creating favorable conditions for the future rapid development, transformation and updating. Other international projects are preparing for international examinations.

Yabao cooperated with the University of South Australia to establish a joint laboratory in September 2015, extending to the overseas. Ren Wuxian said in the interview, “though the journey to global markets being long and tough, it is our goal. In the future, we will realize ‘R&D in one place, and applying for certification in three places’, and ‘production in one region, but sales in three’. We will not only develop the domestic market, but also import international products. For outstanding products produced by small European companies, we will obtain the rights to sell them in China. More importantly, we will meet requirement for the joint venture on R&D, production and management.”

4.5.2. Relation between CEO personality characteristics and managerial cognition & the strategic choice of Yabao Pharmaceutical

1. Formation and evolution of managerial cognition and construction of strategic questions of Yabao Pharmaceutical

In the context of strategy changing and updating, some senior managers are always able to step ahead of other managers to earlier see the necessity, direction and opportunity of strategy changing and updating, and are able to put into effective practices. It is because that these managers paying great attention to staring careers, leading to the adoption of more entrepreneurial strategies, thus promoting strategic transformations. Cho and Hambrick (2006) argued that managers’ attention or focus change was the prerequisite of strategic change. Companies paying more attention to the new environment and emerging fields are more likely to take advantage of the favourable opportunities to change and adopt quick responses. The formation of managerial cognition of Yabao has a close relationship with personality
characteristics of its CEO, Ren Wuxian.

(1) Managerial cognition at the initial stage of entrepreneurship

The formation of managerial cognition of Yabao at the initial stage had a close relationship with personality characteristics and background of its CEO, Ren Wuxian. Before appointed as director of Ruicheng Pharmaceutical, he spent 13 years in Ruicheng Pharmaceutical and was quite familiar with the system and regulations. When he took over Ruicheng Pharmaceutical in 1990, the company’s assets were insufficient to cover its debts, and amount of loss exceeded 1.2 million Yuan. At that time, Ren Wuxian proposed to innovate from several aspects. First came the management system innovation. He cancelled life-time cadres system, and titles of formal workers and temporary workers. He introduced the new examination and rewarding system, allowing cadres both being promoted and demoted, employers both being hired and sacked. He adopted the selection and employment mechanism of “promoting the competent, replacing the mediocre and demoting the incompetent”. Distributions were made according to labour and all must compete for positions, which broke the “golden rice bowl”. Second, products innovation. The updated technique for raw medicines contributed to Yabao’s steady development by occupying the market with low-cost and high-quality products in 1992. Later, effective and innovative paediatric medicine “Magic Baby Patch” (later renamed as “Dinggui umbilical patch for children”) was invented, which won seven global and domestic awards, and pioneered the modernized production of transdermal preparations in China. Last, marketing innovation. Ren Wuxian took the lead to contribute his own money, and then raised over 1 million Yuan with other staff to advertising on CCTV during the golden time, which promoted the dramatic growth of various economic indicators.

By 1996, its output value exceeded 100 million Yuan, and profits and taxes exceeded 10 million Yuan, benefiting over 1000 employees. At the end of 1996, Ruicheng Pharmaceutical acquired three bankrupted enterprises, absorbed over 600 laid-off workers, and revitalized state-owned assets worthy of 60 million Yuan. It introduced CI to start capital operation and low-cost expansion, and established “Shanxi Yabao Pharmaceutical Group Co., Ltd.”. After five years development and accumulation, Yabao became more powerful.

Yabao’s rapid growth was closely related to Ren Wuxian’s personal experience, high desires for achievements and keen insights on opportunities. Ren Wuxian was the only graduate and spent 13 years in Ruicheng Pharmaceutical. Taking over Ruicheng Pharmaceutical, he immediately sweepingly reformed on management system and marketing mode, which showed his relative high need of achievements. Meanwhile, 13 years serving experience made him familiar with the external environment and opportunities faced by Ruicheng Pharmaceutical, so that he was able to seize opportunities and adjust various conditions to get the company out of trouble. He was born in Ruicheng, Shanxi Province, and nurtured by the culture of Jin merchants. The management idea of “devoting to pharmaceutical industry and benefit the society” is also the essence of corporate cultures. Yabao inherited the excellent Jin merchants culture, contributing greatly to today’s brilliant career and brand effects of “Yabao”. Ren Wuxian’s personal experience and high needs of achievements made
managerial cognition focus on “innovation” at that stage.

(2) Performance feedback: forward strengthening of cognition on innovation

The Chairman Ren Wuxian believes that, “Yabao’s successes rely on constant technological innovation.” Dinggui umbilical patch for children, developed by Ren Wuxian himself at the critical moment at the initial stage, are produced every second. The patent paediatric product for diarrhoea take up over 90% market shares in domestic and global paediatric medicine markets, and contributes 56% of the total profits of Yabao. “Magic Baby Patch” (later renamed as “Dinggui umbilical patch for children”) was first targeted at paediatric drugs market, which was closely related to Ren Wuxian’s work experience. He saw a bigger picture, believing that children’s health matters the most since every family had only one child. The “Magic Baby Patch” for diarrhoea, remarkably effective with few side effects and free from injections or medication, would undoubtedly be popular.

It is proved that Ren Wuxian was right. The “Magic Baby Patch” took off upon being launched. Yabao gradually became the leading enterprise by constant occupying markets via independent research and development, and marketing innovation as well. According to MS strategy classification, the strategic choice of Yabao at the stage belonged to exploratory strategy. Such exploratory strategy played a decisive role in the rapid growth of Yabao and further strengthened its managerial cognition of “innovation”.

(3) The first change of Yabao’s managerial cognition

① Brand strategy

Brand and star products mirrors strengths and core competitiveness of enterprises. Possessing star products means the opportunities for sustainable development. Ruicheng Pharmaceutical was only a small county company getting rid of chaos in 1992. It developed slowly for lacking of scientific research and qualified products. Ren Wuxian was clear that competition in the end was the competition among products. Every effort was in vain if without qualified products.

Therefore, Yabao started to focus on the research and development of new tradition Chinese medicine. Coincidentally, a transdermal patch for diarrhoea was made by experts from Shanxi Institute of Traditional Chinese Medicine based on folk ancestral recipes. Although seemingly inconspicuous, it was regarded as a valuable treasure by Ren Wuxian. He believed it should be further developed.

Spotting potentials behind a product requires extraordinary courage and wisdom, while cultivating a qualified brand with good taste requires greater efforts. Studies found that the patch had the best effects on children from treatment mechanism, dosage form characteristics and clinical trials. Therefore, Ren Wuxian decisively targeted the product to 0-6-year-old children and named it as “Magic Baby Patch”. It took off upon be launched, sales of which exceeded 5 million Yuan that year, and doubled the next year. Yabao was revitalized by the “Magic Baby Patch”.
In 1995, the state implemented drug advertising rectification. "Magic Baby Patch" was banned on CCTV because of absolute words “magic”, posing great challenges to the "Magic Baby Patch". However, Ren Wuxian took the crisis as an opportunity for Yabao’s "corner overtaking." In 2001, after approved by levels of authorities, the patch was promoted from “Health Product certificated by Shanxi Province” to “Pharmaceutical Products certificated by the state”, and renamed as “Dinggui umbilical patch for children”, thus once again advertised on CCTV at golden time. Although name change, brand existed. "Dinggui umbilical patch for children" won China Effie Bronze Award in 2006, becoming the first enterprise with that award in Shanxi Province. In July the same year, "Yabao" trademark was recognized by the State Administration for Industry and Commerce as "China's well-known trademarks".

Ren Wuxian said in the interview, "if the product is not well-selected, there is no development value; if the selection is right but target consumers are not well positioned, it probably falls into and ordinary one; if the selection is right and target consumers are not well positioned, the promising market prospects is still impossible without sustained technological innovation." That is the brand philosophy. Yabao’s brand strategy won it the titles of "National Quality & Efficient Enterprise", "Top Ten Corporate Culture Brand in China".

② Independent innovation

Ren Wuxian admitted that, the previous focusing on the research and development of generic drugs was, in fact, "a big mistake." He analyzed the development of world-known pharmaceutical companies and found that no one was entirely rely on generic. "Once one or several new Type I Drugs being produced, the market potential behind is huge." Successes of world-known pharmaceutical companies shifted Ren Wuxian’s focus on technology innovation.

Impacts from the following national policies on Yabao further strengthened his decision. "Essential drug system and new health insurance policy have brought a lot of uncontrollable factors for the development of enterprises. The policy trend is to let the public access to cheap drugs, which means more profits must be shifted from enterprises to the public. The pressure will be great if we only rely on essential drugs." Under such cognition, Ren Wuxian confirmed the "distinctive and differentiated" innovation strategy. In the interview, Ren Wuxian repeatedly mentioned, innovation was both the competitive philosophy and the foundation of survival and development of enterprises. Only independent innovation could enhance core competitiveness to occupy the market. Remembered that the secret of a good product lasting over times was the innovation.

Yabao mainly adopted two measures in the process of independent innovation:

First, to reinforce the development foundation by technological innovation and application of new technologies. In recent years, conforming with GMP transformations, Yabao has invested over 100 million Yuan on technological transformations of the solid preparations production line, transdermal preparations production line, injections production line and extraction of traditional Chinese medicine production line. It purchased advanced testing equipment, and constructed dust and sewage cleaning facilities to meet discharge standards on the "three
wastes”. In 2004, Yabao spent 500 million Yuan to build two modern recycle industrial parks with the characteristics of high-tech, high value-added, low energy consumption and low emissions in Fenglingdu Economic Development Zone in Shanxi Province and Taiyuan Economic Development Zone respectively. Both passed the GMP certification.

Yabao timely and boldly adopted new technologies in the process of independent innovation. For example, in the production process, "ultra-fine grinding", "transdermal slow-release", "super-membrane filtration" and many other technologies were adopted, thus the production level greatly enhanced. When taking use of new technologies, Yabao was not satisfied to the role of an imitator and user, but made these new technologies play a significant role in improving quality, reducing costs and enhancing production level according to company and market demands. That ensured the success docking of advanced technologies and enterprises.

Second, to develop new competitive products relying on talents and technologies. In independent innovation, Yabao adhered to independent development and joint development. On one hand, implement the talent strategy. An investment of nearly 5 million Yuan per year was devoted to staff training and organizing of QC activities to strengthen innovation awareness and stimulate innovation enthusiasm. On the other hand, to import large numbers of talents. Hundreds of graduates and many professional technical talents were recruited to constant strengthen independent innovation.

Emphasizing on technological innovation, Yabao has possessed advantages on treatment of cardiovascular and cerebrovascular diseases, gynecological diseases and paediatric products. “Dinggui umbilical patch for children”, “Baiyu tablets” and many other products have been renowned throughout the country, bringing vitalities to the enterprise.

(4) new managerial cognition: research and development of new drugs creating growth point

New drugs always bring companies a substantial income. However, attractive market prospects and huge investment risks walk side by side. It is showed that the development of an innovative drug takes 10 years to 15 years, and cost 800 million to 1 billion US dollars. However, there are on 10% chances to be successfully launched. But Yabao never stopped innovation.

In 2010, Yabao Research Institute moved from the remote Ruicheng to Beijing, shifting focus from proprietary Chinese medicines and generic drugs to research and development of innovative drugs. This decision mirrored the strategic transformation of Yabao. Ren Wuxian admitted that, the previous focusing on the research and development of generic drugs was, in fact, "a big mistake." He analyzed the development of world-known pharmaceutical companies and found that no one was entirely rely on generic. Once one or several new Type I Drugs being produced, the market potential behind is huge. Successes of world-known pharmaceutical companies shifted Ren Wuxian’s focus on technology innovation.

Adhering to the principle of combining independent R&D and cooperative development, long-term research and development and short-term imitation, Yabao established a company-based, market-oriented technology innovation system combining of production, academic
units, and research. It strengthened cooperation with multinational corporations and overseas top academic teams to develop innovative drugs, and yielded significant results in treatment of diabetes, schizophrenia, cardiovascular and cerebrovascular disease and anti-tumor medication.

Meanwhile, Yabao had to speed up results transformations and increase efficiency to develop rapidly in the field of research and development of innovation drugs. The R&D cycle of innovative drugs takes an average of 10 years with investment of 1 billion US dollars but had low chances to success. This is the main reason why a large number of pharmaceutical business operators do not put expectations on innovative drugs. In 2013, Dr. Wang Peng, chief scientist of the former Xiansheng Pharmaceutical, joined Yabao Pharmaceutical to serve as the president of Yabao Pharmaceutical Beijing Research Institute. He argued that Chinese enterprises were generic drug production oriented. Due to the weak foundation, profitability was not strong, so efficiency and input-output ratio must be paid sufficient attention in the R&D of new drugs. Multinational pharmaceuticals’ R&D modes could not be copied. Chinese companies must recognize that in the early R&D stage mainly depending on scientific progress, the gap between China and foreign countries was very large. While China’s advantage lied in clinical research and market at the late stage. Wang Peng said, “results transformation was the most important for a valuable research result. Excessive attention to profits, narrow minded were stumbling blocks of results transformations. Only by integrating resources to promote the successful listing of products could profits gained.”

Ren Wuxian once said, the core concept of Yabao in the R&D of new drugs is “sharing”. At present, Yabao invested 5% of total sales to R&D, having gaps comparing with multinational pharmaceutical companies. Therefore, companies must be open to all resources to speed up R&D and launching of valuable new for the benefit of patients.

It could be seen that Yabao pursued the "distinctive and differentiated" innovation. Ren Wuxian hoped that products launching in the future to seize the initiative. Yabao's R&D and innovation focused on pediatrics, drugs for cardiovascular and cerebrovascular diseases and anti-tumor medication the three major areas (that is to say, mainly depending on pediatric drugs, and gradually develop to drugs for cardiovascular and cerebrovascular diseases and anti-tumor medication). Yabao took the strategic layout of taking contemporary traditional Chinese medicine preparations, 24-hour slow-release chemical preparations and biological preparations as priorities of the R&D of new products, assisted by health food and supplemented with health products.

(5) Positive feedback of performance

At this stage, the strategy of Yabao shifted from proprietary Chinese medicines and generic drugs to the research and development of new drugs. While maintaining the existing market advantage, Yabao focused on the development of new drugs and new market, on the efficiency and input-output ratio of new drugs’ research and development. According to MS strategy classification, strategic choice of Yabao pharmaceutical, at this stage, was both analytical and exploratory.
Yabao is bold to try to develop new drugs, which is closely related to Ren Wuxian’s personality characteristics. Engaging in the pharmaceutical industry for years, Ren Wuxian has a clear understanding on the situation of the research and development of new drugs. His high needs for achievements encourages him to aim at the world-class level in the field of new drugs research, to produce pioneering innovative drugs rather than knock-off products. Data from the questionnaires showed that Ren Wuxian was with a high level of risk propensity. In the interview, Ren Wuxian said, “Yabao aims to become the most innovative pharmaceutical company in China, and establish the brand in global markets.”

(6) Another change of managerial cognition

In 2015, influenced by the medical insurance costs control, decrease of tender price, approval system rectifications, and many other policies, the pharmaceutical industry was under great pressure and growth rate further declined. While at the same time, conforming to the development trend, Yabao ushered in opportunities. The “two-child policy” brought huge consumption potentials for children health market; the development of tradition Chinese medicine was promoted to the strategic level, contributing to the rapid growth of traditional Chinese medicine enterprises; the mission of “Healthy China” stimulated pharmaceutical companies to enter into the big health industry; the combination of the Internet and traditional pharmaceutical companies released more market spaces; the development of “One Belt and One Road” laid foundations for Chinese pharmaceutical companies to explore the international markets.

① Internationalization

Ren Wuxian said, “international projects could not only promote domestic pharmaceutical preparations to the international markets, but also enhance our production level and management efficiency.” Taking advantages of international projects, Yabao hoped to produce high-quality, high-standard slow-release preparations and other formulations, and to produce molecular targeted drugs, personalized drugs, antibody drugs, immunoprophylaxis and other biological drugs, so as to seize commanding heights of the pharmaceutical market. That was the in-depth exploration and extension of technological innovation.

Yabao started three international projects from 2007— the establishment of Yabao Biopharmaceutical production line in Beijing; the establishment of slow-release preparations production line in Fenglingduo Yabao Industrial Park; the establishment of six raw medicine production lines and one high-end production line of plastic bottles for medicinal use. All these projects passed national GMP certification of new edition. In late December 2013, the biological solid preparations production line of Yabao Pharmaceutical Beijing Yabao Biological Co., Ltd. passed USA’s FDA certification. Till then, Yabao finally accessed to the international high-end markets, creating favourable conditions for the future rapid development as well as transformation and upgrading of Yabao, opening a new chapter for China's pharmaceutical preparations entering into the European and American markets. Other international projects were also preparing for international certification.

Ren Wuxian mentioned in the interview, “We invested a lot to international projects to boost
the development of domestic pharmaceutical preparations, to facilitate Chinese pharmaceutical preparations to stride toward the international markets. That will greatly enhance our overall level of development to better expand the market and to be more competitive.”

②Large health strategy

Large health is one of the key breakthroughs of Yabao in the future. Ren Wuxian targets large health as “three major products”—nourishment and health food, special cosmetics, and health products. Yabao has made progress in the field, and 10 health care products independently developed by Yabao have got production permissions. As for special cosmetics, Yabao values two patented products for hair regrowth and anti-acne developed by a team from the United States, and the cooperation is under negotiation. In order to develop the large health field, Yabao is recruiting salesmen.

August this year, expansion and transformation of Jiuhe production line and 12 new varieties of Weiyuan series of a branch of Yabao Group passed the on-site inspection and got the food production license. Since then, “Weiyuan” series of nourishment has increased from 9 to 21 varieties, and the transformation of Jiuhe production line increases output from 120,000 bags to over 280,000 bags.

③ Internet marketing mode

“Yabao will not miss the opportunity to Internet marketing era”, said Ren Wuxian in the interview. Since this year, Yabao starts to explore the Internet drug sales, and the new models of e-commerce. “I identify it as the promising future. But how can I do not know anything about it?”

So Ren Wuxian went to Beijing to participate an Internet e-commerce training. That was a four-day training and most attendants were young people, among which, he was very conspicuous for being over 50 years old. According to Ren Wuxian, in addition to the flagship drugs, nourishment, health care products were also the highlights of online selling.

To sum up, the strategic choice of Yabao at that stage was defensive and forward-looking. While maintaining existing market and obtaining stable profits of the flagship drugs, Yabao started to develop new drugs and explore fields of nourishment, health care products and the Internet marketing.
2. Knowledge structure characteristics of managerial cognition and enterprises’ strategic behaviors

Table 4-5 compares environment characteristics, managerial cognition and strategic behaviors of Yabao from 1990 till now. The development of Yabao from 1990 till now can be divided into two stages according to environment characteristics. The first period was from 1990 to 2010 with the characteristics of pharmaceutical advertisement rectification, merges and acquisitions, and adjustments of national economic structure. The second period was from 2010 till now with the characteristics of pressures posed on pharmaceutical industry, medical system reform, the introduction of the second child policy, “Health China” Strategy, combination of the Internet and traditional pharmaceutical industry and the initiative of “One Belt and One Road”. It is found that, from 1990 to 2010, managerial cognition of Yabao had been “focused on innovation”. Strategic behaviors were similar throughout the period although environment changed dramatically. In 1990, Guan Yanbin took over Ruicheng Pharmaceutical and innovated on management system, products and marketing mode. In 1992, Yabao started the research and development of important new products. In 1995, under the circumstance of national pharmaceutical advertisement rectification, Yabao insisted on innovation under the guidance of previous managerial cognition. In 2001, “Dinggui umbilical patch for children” was promoted to national permitted medicine. At the same time Yabao continued independent innovation. In 2004, it spent 500 million Yuan to build an high-tech recycle industrial park to develop competitive new products relying on talents and advanced
technologies. In 2010, Yabao Pharmaceutical Research Institute moved to Beijing, and shifted focus from proprietary Chinese medicines and generic drugs to the research and development of innovative drugs. All the above analyses show that enterprises’ strategic behaviors stayed the same under the guidance of same managerial cognition, although environment changed dramatically.

Table 4-5 Comparisons of Environment Characteristics, Managerial Cognition and Strategic Behaviors of Yabao from 1990 till now

<table>
<thead>
<tr>
<th>Time Span</th>
<th>Environment Characteristics</th>
<th>Managerial Cognition</th>
<th>Strategic Behaviors</th>
</tr>
</thead>
</table>
| 1990-2004   | · pharmaceutical advertisement rectification  
· merges and acquisitions  
· adjustments of national economic structure                                            | focusing on innovation                | · management system innovation  
· product innovation  
· marketing innovation  
· entering into the capital market  
· independent innovation  
· brand development strategy  
· research and development of new drugs                                                |
| 2004 till now | · medical system reform  
· pressures posed on pharmaceutical industry  
· “Health China” Strategy  
· second child policy  
· combination of the Internet and traditional pharmaceutical industry  
· the initiative of “One Belt & One Road”                                             | seeking for new profit growth points | · “Three-step” Strategy  
· Large Health Strategy  
· the Internet marketing strategy  
· internationalization                                                              |

From 2004 till now Yabao has been in the environment with characteristics of pressures posed on pharmaceutical industry, medical system reform, the introduction of the second child policy, “Health China” Strategy, combination of the Internet and traditional pharmaceutical industry and the initiative of “One Belt and One Road”. The change of managerial cognition of senior managers leads to the different strategic behaviors. Under the guidance of “increasing competitiveness”, Yabao took strategies of brand development,
independent innovation, new drugs development and “Three-step” Strategy. In 2015, Yabao established the managerial cognition of “seeking for new profit growth points”, and its strategic behaviors began to focus on the diversification of products, and put forward the large health strategy, the Internet marketing strategy and international strategy. All these analyses demonstrate that different managerial cognition leads to different strategic behaviour even under the same environment.

3. Relation between CEO personality characteristics and managerial cognition & the strategic choice of Yabao Pharmaceutical

The change of strategies proved Ren Wuxian’s strategic choices at the initial stage of Yabao was forward-looking, which is closely related to his career experience and personality characteristics. At that time, Wu was the only graduate in the factory. He served as an operator, custodian, technician, technical chief, deputy director, and chief engineer successively. He studied every kind of equipment and craft, and grasped every technique. He was recognized as being creative. Moreover, he was born in Ruicheng, Shanxi Province. Nurtured by Jin-merchants Culture, he was able to accurately seize opportunities. So, upon taking over Ruicheng Pharmaceutical, he sweepingly reformed the management system, products and marketing mode. Products produced by new techniques and the launching of “Magic Baby Patch” promoted sales dramatically. At that stage, Yabao focused on seizing business opportunities, innovation, and opening up new markets. The strategic choice of that stage was the exploratory one. The strategy-making process showed Renwuxian had a high level of openness to experience, which had profound influence on the change of management cognition in the next period.

At the second stage, Yabao marched towards the capital market. In 1996, Ren Wuxian made the strategic decision to be listed. Yabao acquired four local bankrupted companies and Shanxi Yabao Pharmaceutical Group Co., Ltd. was officially established in 1999. After five years of efforts, in 2002, Yabao A shares listed successfully. That decision is related to Ren Wuxian’s adventurous character. Data from the questionnaire showed that Ren Wuxian had a high level of risk propensity. That was showcased by his “new drugs research and development” strategy, which was prohibitive. The strategic choice reflected his professional operation philosophy. At that stage, Yabao still focused on “innovation”, and its strategic behaviors are both exploratory and defensive. While maintaining existing market, he started independent innovation on proprietary Chinese medicines and generic drugs. He adopted analyzer strategy at that stage.

At the third stage, influenced by the new medical reform and national economic restructuring, Yabao changed strategy to develop new drugs to enhance competitiveness and find new profit growth points. At that stage, Yabao maintained analyzer strategy. While committing to research and development of new drugs, Yabao expanded business areas and implemented "Large Health" Strategy. Entering into the Internet era, Yabao started the Internet marketing, combining the Internet and traditional pharmaceutical industry. Moreover, Yabao has also developed an international strategy to promote domestic pharmaceutical preparations to stride
into the international market. That development idea matched and the current market environment.

In summary, the transition from prospector strategy at the first stage to analyzer strategy at the second and third stages is closely related to Ren Wuxian’s personality of high needs of achievements, openness to experience and high level of risk propensity. His innovative spirit influences Yabao all over the time, making strategic choices of all the three stages forward-looking. During the interview, Ren Wuxian mentioned repeatedly that “innovation was the secret to Yabao’s success”.

4.6 Case analysis I: Qinghai Spring

4.6.1 Strategic change process of Qinghai Spring

Qinghai Spring is short for Qinghai Spring Medicinal Resources Technology Co., Ltd. It was established in 2004, being one of the first batch of 5 pilot enterprises applying cordyceps sinensis in health care food. Its core product is the independently developed pure powder of cordyceps sinensis of “very grass · 5X” brand. Its Chairman Zhang Xuefeng acquired Qinghai Tanggula Pharmaceutical Co., Ltd. and started to developing cordyceps sinensis in 2004. The enterprise was established in 2007 and put into production in 2008, and passed GMP certification in 2009. In 2015, Qinghai Spring Medicinal Resources Technology Co., Ltd. was successfully listed under the name of Xiancheng Mining Enterprise, achieving great-leap-forward development. The development of Qinghai Spring can be divided into three stages from the perspective of strategic development. Zhang Xuefeng has always been playing a significant role throughout the three stages.

1. Stage 1: start studying cordyceps sinensis

According to the limited public information, Zhang Xuefeng is from Chengdu, Sichuan Province, graduated from Sichuan University and obtained a master's degree in business administration. He also has qualifications of practicing lawyers and certified accountants. After graduation, he served as the manager or director in Sichuan Huaxing Company, Beijing Dacheng Law Office Sichuan Branch. He served as the chairman of Qinghai Tanggula Pharmaceutical Co., Ltd. over 2003 to 2005.

Zhang Xuefeng first knew cordyceps sinensis in 2003 on a visit to Buddha’s. A horse cherished by the Buddha got sick in that winter. The Buddha fed the horse seven cordyceps sinensis per day. After a week, the horse was cured. That caused Zhang Xuefeng’s great interests for cordyceps sinensis. Cordyceps sinensis is recognized as an excellent tonic. But it had a slow effect on his friends. He wondered how the horse could come back to life from the verge of death within only one week?

He had the desire to make good use of cordyceps sinensis. Besides, “witnessing the hardship farmers collecting it, I had a glorious sense of mission to make my wished come into reality, and to make the limited cordyceps sinensis contribute greater for human health”. Since then, Zhang Xuefeng started to study cordyceps sinensis. In 2004, Qinghai Spring was established.
2. Stage 2: making use of cordyceps sinensis

There are so many methods to take cordyceps sinensis, but none was proved to be the most effective. 1300 years ago, people took it in decoction with other herbs; 316 years ago, it was soaked in wine as the tonic wine; 245 years ago, it was stewed with the duck to eat; 10 years ago, it was ground into flour...

Cordyceps sinensis is a treasure cannot be artificially cultivated. So what is the most scientific and efficient way to take it? How to unleash every value of it? It was later found by Zhang Xuefeng that once heated more than 60 °C, essences would be lost.

With a determined mind, Zhang Xuefeng began to study how to improve efficiency of cordyceps sinensis. Locked himself in the laboratory, he aimed to find a method to both clean and retain the essences. After numerous experiments and “wasted” cordyceps sinensis with the value over millions of dollars, he finally found the method— maintaining the water temperature around 15°C and limiting cleaning time less than one and a half minutes. Under that conditions, cordyceps sinensis would not shrink and essences would retain at the maximum. As for the special tool for cleaning cordyceps sinensis, it was invented by Zhang Xuefeng inspired by many cleaning tools he found on a business trip to Germany.

“I believe all the efforts are not in vain. We have found the most effective way to clean cordyceps sinensis, and now people can take it safely and effectively.” Although that was years ago, Zhang Xuefeng is still full of passion.

At the same time, Germany Rongen Pharmaceutical funded by Qinghai Spring started research and technical innovation. Qinghai Spring took it as a platform to cooperate with European first-class institutions, offering continuous technical support to Qinghai Spring.

Five years later, Qinghai Spring launched “very grass · 5X” brand at the end of 2008. Relying on the strong R&D strength, several R&D platforms at home and abroad, dozens of patents and practical new technologies, “very grass · 5X” series products became the highest scientific and technological achievements in the cordyceps sinensis physical processing field, bringing epoch-making changes for the cordyceps sinensis industry.

3. Stage 3: business transformation

However, in 2009, the Ministry of Health stipulated that cordyceps sinensis should not be used as an ordinary edible raw material. Production license of Qinghai Spring “very grass” series products was cancelled. The “very grass” series products had to transform to “traditional Chinese medicine decoction pieces”. Later, “very grass” series products had to be transformed due to the change of regulations. In July, 2012, the State Food and Drug Administration published the Plan to Use Cordyceps Sinensis as Edible Health Food. Qinghai Spring then became one of the first batch of 5 pilot enterprises applying cordyceps sinensis in health care food. At that time, Qinghai Spring developed rapidly. According to 2009-2013 China Cordyceps Sinensis Market Research Report prepared by the South Institute of Medicine Economic Research, as the only one pure cordyceps sinensis powder production enterprise currently in China, cordyceps sinensis lozenge produced by Qinghai Spring
accounted for the 51.5% market share of the deep processing of cordyceps sinensis, and accounted for over 11.1% sales of the cordyceps sinensis industry. Qinghai Spring was raked the top enterprise in the industry.

Despite of all the challenges, each risk and crisis brought rewards. Ten years after the establishment, Qinghai Spring was successfully back-door listed in February 2015. Cordyceps sinensis products increased popularity.

In March 2016, Qinghai Spring’s holding subsidiary Spring Pharmaceutical received Notice of Terminating Pilots of Pure Cordyceps Sinensis Powder Tablets from Qinghai Food and Drug Administration. Thus, the production of pure cordyceps sinensis powder was officially suspended.

4.6.2. Relation between CEO personality characteristics and managerial cognition & the strategic choice of Qinghai Spring

1. Formation and evolution of managerial cognition and construction of strategic questions of Qinghai Spring

Formation and evolution of managerial cognition of Qinghai Spring is influenced by technical environment and institutional environment. Technical environment refers to the environment in which products and services are produced and exchanged, including customers, suppliers, competitors, substitutes, potential entrants and etc. Institutional environment refers to an environment characterized by completed rules and requirements, including both formal institutions such as laws, rules and regulations, and informal institutions such as norms, culture, ethics and etc. (Scott, 1987; Peng, 2002). The process of strategic change clearly showed impacts of technical environment and institutional environment on the formation and evolution of management cognition of Qinghai Spring.

(1) Managerial cognition at the initial stage of entrepreneurship

Qinghai Spring was established in 2004 by Zhang Xuefeng. The formation of managerial cognition of Qinghai Spring at the initial stage had a close relationship with personality characteristics and background of its CEO, Zhang Xuefeng. Before involving in pharmaceutical industry, he was a lawyer, thus he was cautious, responsible, persistent and quick in thought.

Buddha cured his beloved horse with cordyceps sinensis inspired Zhang Xuefeng to devote to cordyceps sinensis. That year, Zhang Xuefeng acquired Qinghai Tanggula Pharmaceutical, where located the Northwest Institute of Plateau Institute of Chinese Academy. After exchanges with experts, Zhang Xuefeng learned that ecological resources of the Qinghai-Tibet Plateau are fragile but rich. Moreover, they boast medicinal values. At that time, the trend of the international pharmaceutical industry was to develop resources in “mountains and oceans”. Development of the Qinghai-Tibet Plateau, where boasted great number of high-altitude species, met the trend.

Spotting the promising prospects, Zhang Xuefeng immediately turned his attention from the lawyer industry to the pharmaceutical industry, and threw himself wholeheartedly on the
research, development and utilization of biological resources on the Qinghai-Tibet Plateau. The entering into the pharmaceutical industry and devotion to cordyceps sinensis showed Zhang Xuefeng had keen insights and was good at seizing opportunities. He was a lawyer, which demands quick in thought, observing ability, calm and composed. Zhang Xuefeng demonstrated these “eagle-like” personality characteristics.

After the establishment of Qinghai spring, Zhang Xuefeng locked himself in the room for two months, and created the world’s most completed cordyceps sinensis cleaning and purification technology. Later, he personally led a team to Germany, and spent a lot to cooperate with well-known German companies. That started the development of "very grass" series products. Gradually, Zhang Xuefeng became a leader in the research of advanced cordyceps sinensis technologies. He seemed to change from a “manager” into a “scientist”. He was promoted as the managing director of Qinghai Province Pharmaceutical Association, the director of Qinghai Cordyceps Sinensis and Human Health Research and Development Foundation. Zhang Xuefeng’s hard-working and perseverance personality characteristics is related with his education background and eagerness for knowledge. Zhang Xuefeng’s obsession with technologies also made Qinghai Spring, at that time, focus on “technological innovation”.

(2) Performance feedback: forward strengthening of cognition on innovation

After reading a lot of information, inspired by the pollen broken absorption, Zhang Xuefeng separated cordyceps sinensis into two parts of the worm and the plant, using different techniques to open cell membranes and cell walls respectively, so that the utilization rate of cordyceps sinensis can be improved.

Meanwhile, Qinghai Spring started technical development and innovation with German Rongen Pharmaceutical funded by Qinghai Spring, and took it as a platform to cooperated with European world-class institutions so as to offer continuous technical support to Qinghai Spring.

However, the powder is very small and difficult to store or transport, or even to be taken. To address that, Zhang Xuefeng tried to compress 100% pure cordyceps sinensis powder into tablets, which was regarded as a mission impossible by pharmaceutical companies in China, Japan, the United States and Germany. However, after persistent efforts and a consumption of cordyceps sinensis powder with the value over tens of millions Yuan, the team led by Zhang Xuefeng successfully produced the world’s first pure cordyceps sinensis powder tablet. After painstaking research, Qinghai Spring, at the end of 2008, launched the “very grass • 5X” cordyceps sinensis series products. That were the combination of nature cordyceps sinensis essences and cutting-edge technologies. Essences of cordyceps sinensis were thus retained at the maximum and easy to be absorbed.

In order to meet the edible food safety standard, Qinghai Spring used professional deep cleaning, multiple cold sterilization treatment, inert gas sealing packaging and other processes to ensure “very grass • 5X” cordyceps sinensis series products meet requirements of GMP (Good Manufacturing Practice). Based on that, Qinghai Spring developed a series of easy to take and absorb “very grass” tablets and capsules by employing patented technologies,
“making the most use of limited cordyceps sinensis”. It passed GMP certification in 2009. The production standards of “very grass” was established as the industry standard on December 7, 2010.

Huge investment over years appeared to be unbearable. But Zhang Xuefeng seemed to be so natural since he believed in success. In the interview, Zhang Xuefeng said, "the development process of ‘very grass’ was really no return on investment, but I never thought of giving up. I believed in success. Most people believe it for having seen that, but I see it because I believe it.” It showed that Zhang Xuefeng had high needs for achievements. Analysis of the questionnaire showed that he had a high level of risk propensity, which could be seen from his devotion to the study of cordyceps sinensis. In addition, his keen insights helped him spot huge potentials behind cordyceps sinensis. According to the MS strategic types, the strategic choice of Qinghai Spring at this stage was forwarding-looking and exploratory. This development strategy had further strengthened management cognition of “technological innovation” of Qinghai Spring.

(3) The first change of Qinghai Spring’s managerial cognition

Cordyceps sinensis is a valuable Chinese herbal medicine and with various remarkable effects, thus enjoying high acceptance and recognition. However, due to human destruction, most cordyceps sinensis complex has been extinct. The current most intensive distribution is only 1-5 per square meter. The national annual output of wild cordyceps sinensis has been less than 100 tons. What’s worse, the counterfeit and adulterated grass prevails, sales and distribution channels are in chaos, transaction protection or after-sales service system do not exist. In addition, there is a lack of standards on cordyceps sinensis products, and trustworthy brands. Under such market environment, Qinghai Spring has its own core competitiveness of advanced technologies. At this stage, Qinghai Spring's strategy shifted from “technological innovation” to “brand strategy” and “marketing strategy”.

①The “very grass” brand strategy

Creating differences is the priority of brand building. Effective differences establish a special link between the brand and consumers, thus building the core values of the brand. The “very grass” brand of Qinghai Spring established a systematic, accurate and clear brand planning after analysing the enterprise, industry and consumers, and refining competitive advantages and core values.

Qinghai Spring positioned the brand from three aspects. (1) The brand will be the first choice of target consumers. (2) The brand “Qinghai Spring” is used to enrich brand connotation. (3) Promote sales of sub-brand products via “very grass” brand.

Qinghai Spring positioned characteristics of the brand: “Natural, safe, rare, and nutritious”. Products/ services experience; “natural, harmonious, loving” personalities/ emotional communication; “innovative, professional, established, trustworthy, and social responsible” corporate image (Figure 4-4). Meanwhile, it positioned the “very grass” brand as “essences of the heaven, and the best on earth” (Figure 4-5).
The focus of seeking for profits growth points is showned in the cause-and-effect logic of “opportunity—professionalism”. Influenced by professional thinking, in order to achieve greater profits, Qinghai Spring classified “very grass” into the original grass and cordyceps sinensis final products (pure powder and pure powder tablets) according to different consuming behaviors after the professional analysis of consuming behaviors, consuming mentalities and product characteristics. Consuming behaviors are divided into buying for self-
use, namely diseases treatment and health care, and buying as presents. Table 4-6 analyzes consuming tendencies of different consuming behaviors.

<table>
<thead>
<tr>
<th>Consuming behaviors</th>
<th>Aims</th>
<th>Consuming tendencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying for self-use</td>
<td>diseases treatment</td>
<td>Disease treatment being the main purpose; focusing on the genuine and purity of cordyceps sinensis; original grass consumption as the major part.</td>
</tr>
<tr>
<td></td>
<td>health care</td>
<td>More receptive to cordyceps sinensis products; focusing on purity, way of taking, and shelf life of products.</td>
</tr>
<tr>
<td>Buying as presents</td>
<td>presents giving</td>
<td>Emphasizing on identity, brands’ popularity; exquisite packaging being preferred.</td>
</tr>
</tbody>
</table>

Qinghai Spring has its own professional grass certification and purchasing system and food purification system. As for certification and purchasing of the original grass, Qinghai Spring established a collection network with over 50 workshops in cordyceps sinensis growing areas. They connected to each other geographically, becoming a criss-cross purchasing network covering major growing areas of cordyceps sinensis, thus an orderly basic supply chain being established. Improved information management system ensured all the purchased cordyceps sinensis a clear origin. It also had the most stringent cordyceps sinensis purchasing criteria and system within the industry. Each cordyceps sinensis has been carefully selected to ensure its purity. In addition, Qinghai Spring had its own professional team to evaluate cordyceps sinensis. All of the cordyceps sinensis appraisers and valuers must pass rigorous training assessment before the appointment. Qinghai Spring employed world leading detection equipment, and scientific testing system to check various quality indicators of cordyceps sinensis. Stringent and multiple testing ensured products quality. As for the food purification system, Qinghai Spring mastered the professional in-depth cordyceps sinensis cleaning technology, low temperature drying technology and multiple cold sterilization technology, so that cordyceps sinensis could be taken directly.

③ Marketing strategy

Qinghai Spring itself has advanced marketing ideas and a very wide range of marketing channels, boasting the obvious brand advantages. It has the marketing network of over 180 selected partners and more than 700 sales terminals, covering almost the whole country. With the further expansion of the market scale of cordyceps sinensis, Qinghai Spring will receive increasing popularity, the scale of sales will be expanded accordingly. The existing marketing
network is no longer able to meet demand for scale selling. In order to make better use of the vast market, Qinghai Spring will continue to cooperate with qualified partners to further expand the sales force. Meanwhile, Qinghai Spring will gradually deploy marketing channels according to the market situation, gradually covering the third- and fourth-tier cities, to offer services to more consumers.

As a businessman, Zhang Xuefeng fully grasp the operation of the market. He also mentioned in public that understanding customers would enable the company to develop more quickly. At the initial development stage of “very grass”, Qinghai Spring targeted customers with annual income over 10 million Yuan. Although the “very grass” series product had been suffering from public doubts on quality, the price of them increased year after year, which was gradually classified as “luxury products”. It is learned of that Zhang Xuefeng has a strong control desire, and is determined to insist on the luxury positioning. Whether franchisees or stores, Zhang Xuefeng insists on the tag price with no discounts. This makes the price of the major product pure cordyceps sinensis powder tablets rise from 100-200 Yuan per gram of the raw material to a thousand Yuan per gram of the final product, several times of gold price.

The success has closely relationship with Zhang Xuefeng’s efforts on advertising investment. He developed an effective marketing program to highlight the high-end positioning. Since 2013, its advertisement “cordyceps sinensis, now in tablets” has been presented from CCTV to TV stations of provincial level. Advertising of pure cordyceps sinensis powder tablets can be easily found in airports, high-end shopping malls, five-star hotels and places where high-income groups are likely to be. According to the public information, over the past five years, Qinghai Spring has invested over 1 billion Yuan on advertising. Only from 2014 to the first half of 2016, the advertising cost was as high as 460 million Yuan.

Driven by huge advertising investment, Qinghai Spring’s income soared. Net profit increased from 11.5961 million Yuan in 2011 to 366 million Yuan in 2014 by 3055.72%, and income increased from 322 million Yuan to 2.063 billion Yuan by 541.14%, creating the miracle of performance increasing 30 times in only three years.

Promoted both by product glorifying and capital operation, Qinghai Spring, with the title of “the first share of cordyceps sinensis”, announced the backdoor listing in 2014, and eventually completed in June 2015.

Zhang Xuefeng’s insist on no discount showed relatively strong desire to control. Data of the questionnaire also showed that he had a higher tendency to control. In conclusion, Qinghai Spring, at that stage, committed to product marketing. It actively explored opportunities to achieve high profits. The strategic choice was an analyzer strategy.

(4) The second change of Qinghai Spring’s managerial cognition

① Negative feedback of performance, and changed institutional environment—change of previous managerial cognition

Qinghai Spring created great profits. But at the same time, due to changes of external environment, “very grass” changes its name and form several times, and received doubts from
In 2009, Qinghai Spring officially launched pure cordyceps sinensis powder tablets. According to regulations of that time, it can be used as native specialty, traditional Chinese herbal medicine or food to be sold. Qinghai Spring obtained food safety license, and identified it as “Ordinary food”. But less than a year, on December 7, 2010, the State Quality Supervision Bureau of Food Production Supervision Department issued Notice on Cordyceps Sinensis Shall Not Be Used as Raw Material of Ordinary Food, according to which, “very grass” had to be classified into medicine and changed to be the “traditional Chinese medicine lozenge”.

Later in August 2012, the State Food and Drug Administration issued a notice to start the piloting work to use cordyceps sinensis as health care food. In 2013, Qinghai Spring was selected as one of the five pilot enterprises, and “very grass” changed its identity to the “pilot products of comprehensive development and utilization of Qinghai advantageous resources”.

Although these changes were recognized by the regulatory authorities, the multiple changing made Qinghai Spring be in doubts. Particularly, in November 2014, Wang Hai suspected of the missing of cordyceps in 5X Classic Lozenge, throwing Qinghai Spring into the quagmire of false propaganda.

On February 4, 2016, the State Food and Drug Administration issued Tips on Cordyceps Sinensis Consumption, claiming that long-term use of cordyceps would lead to excessive intake of arsenic, and may bring health risks. Qinghai Spring “challenged” the State Food and Drug Administration through the open letter and the Internet on February 17 and March 4 in 2016 respectively, requiring information of the tested production (sales) enterprises, testing results and other documents. But this move did not work. On February 26, the State Food and Drug Administration issued Notice on Terminating Pilot Program of Using Cordyceps Sinensis as Health Food, meaning Qinghai Spring could no longer produce or sell pure cordyceps sinensis powder tablets.

Meanwhile, according to the annual report of 2015, income of Qinghai Spring reached 542 million Yuan, decreasing by 49.7%; net profits attributed to shareholders of listed companies decreased by 69.91% 60.1802 million Yuan; net profits after tax decreased by 67.55% to 58.7275 million Yuan. In addition to public doubts, the promotion of frugality and implementation of anti-corruption lead to the decline. Qinghai Spring’s “preferring marketing to products” business model was no longer suitable for the development of that stage.

② Establishment of new managerial cognition

The suspension of the main product, pure cordyceps sinensis powder tablets, posed great threats to Qinghai Spring and Spring Medicinal. In order to eliminate risks and maintain sustainable development, April 5, 2016, Qinghai Spring announced that the holding shareholder Tibet Rongen Technology Co., Ltd. intended to transfer national sales rights of six medicine with cordyceps sinensis as the raw material produced by the wholly-owned subsidiary, Sanpu Pharmaceutical Co., Ltd., to Qinghai Spring Medicinal Resources
Technology Co., Ltd. (hereinafter referred to as “Spring Medicinal”), a subsidiary of Qinghai Spring. Spring Medicinal also intended to make full use of its advantages in the development and sales of cordyceps sinensis to cooperate with Sanpu Pharmaceutical. At the same time, Spring Medicinal strengthened production and sales of cordyceps sinensis, increased market shares, strengthened and accelerated the development and applying for approval of new products and health care products so as to put them into production as soon as possible. In addition, Qinghai Spring carried out mergers and acquisitions to maintain sustainable development. It will continue to further strengthen the internal control and management to enhance the ability to resist internal and external risks, improve resources optimal allocation, and reduce operating costs. It will continue to emphasize on quality to maintain sustainable development.

To sum up, the current strategic choice of Qinghai Spring has the characteristics of analyzer strategy. The current institutional environment is unclear with a certain degree of dynamic and uncertainty. Taking that into consideration, no matter the cooperation with Sanpu Pharmaceutical or business transformation, products will have to meet national standards. Besides, the high investment and long cycle of the early investment pose risks for the company. Even after the launching, the company have to bear risks from the market. Qinghai Spring's existing strategic positioning is to maintain the existing market, prudently carry out product development and innovation, so as to go through difficulties to achieve sustainable development.

Figure 4-6 Cause-and-effect Diagram on Evolution of Qinghai Spring Environment, Cognition and Strategic Behaviors

2. Knowledge structure characteristics of managerial cognition and enterprises’ strategic behaviors

Table 4-7 compares environment characteristics, managerial cognition and strategic behaviors of Qinghai Spring. The development of it from 2004 till now can be divided into two stages according to environment characteristics. The first is from 2004 to 2009 with characteristics
of developing resources in “mountains and oceans”, and outdated domestic technologies on cordyceps sinensis. The second is from 2009 to date with characteristics of cordyceps sinensis no long being ordinary food raw material, “Healthy China” Strategy, population aging and unified regulation of health food. It is found that from 2004 to 2009, Qinghai Spring’s strategic behaviors were similar due to the same managerial cognition, although the environment has undergone tremendous changes. At the first stage, under the guidance of managerial cognition of “changing cordyceps sinensis”, it found the most effective way to clean cordyceps sinensis after persistent efforts. After five years’ devotion, Qinghai Spring at the end of 2008 launched 5X· Very Grass Cordyceps Sinensis product system, brings epoch-making changes for the cordyceps sinensis industry. All the above analyses show that enterprises’ strategic behaviors stayed the same under the guidance of the same managerial cognition, although environment changed dramatically.

The second is from 2009 to date with characteristics of cordyceps sinensis no long being sold as ordinary food raw material, “Healthy China” Strategy, population aging and unified regulation of health food. The change of management cognition of senior managers directly leads to the change of Qinghai Spring’s strategic behaviors. In 2009, the Ministry of Health stipulated that cordyceps sinensis should not be used as an ordinary food raw material. Therefore, Qinghai Spring establish the managerial cognition of “business transformation” and transformed very grass products to the “traditional Chinese medicine tablets”. In 2012, according to the regulation of the State Food and Drug Administration, the very grass product had to change again to be sold as health food. It was during that period that the managerial cognition of Qinghai Springer changed to “improve competitiveness” and that marketing strategy was implemented. By 2013, sales of Qinghai Spring raked the first in the cordyceps sinensis industry. Qinghai Spring succeeded in backdoor listing in 2015. In 2016, the Qinghai Food and Drug Administration issued Notice of Terminating Pilots of Pure Cordyceps Sinensis Powder Tablets. Thus, Qinghai Spring’s managerial cognition once again changed to “business transformation” to speed up the development of new health care products. All these showed that different managerial cognition lead to different strategic behaviors even under the same environment.

Table 4-7 Comparisons of environment characteristics, managerial cognition and strategic behaviors of Qinghai Spring from 2004 till now

<table>
<thead>
<tr>
<th>Time Span</th>
<th>Environment Characteristics</th>
<th>Managerial Cognition</th>
<th>Strategic Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2009</td>
<td>· trend of developing resources in “mountains and oceans” in global pharmaceutical industry&lt;br&gt;· outdated domestic technologies on cordyceps sinensis</td>
<td>changing cordyceps sinensis</td>
<td>· technological innovation&lt;br&gt;· “very grass” brand strategy&lt;br&gt;· marketing strategy</td>
</tr>
<tr>
<td>2009 till now</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>---------------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cordyceps sinensis no long being sold as ordinary food raw material</td>
<td>cooperation with Sanpu Pharmaceutical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Healthy China” Strategy</td>
<td>increasing market shares</td>
<td></td>
<td></td>
</tr>
<tr>
<td>population aging</td>
<td>speeding up the development of new health care products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unified regulation of health food</td>
<td></td>
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</tr>
</tbody>
</table>

3. The relation between CEO personality characteristics and managerial cognition and strategic choice of Qinghai Spring

Strategic leaders’ personality characteristics have a significant impact on the choice of strategy and organizational structure of enterprises. The different personality of strategic leaders leads to different strategic orientation of enterprises. It is because of the different strategic choices of enterprises that makes different financial performance and competitive advantage of enterprises under different environment. The cause-and-effect diagram on evolution of Qinghai Spring environment, managerial cognition and strategic behaviors proved that.

Qinghai Spring’s investment and research in cordyceps sinensis at the initial development stage were with strong predictability and forward-looking, which had a close relationship with Zhang Xuefeng’s experience of a lawyer. He has keen insights and sound judgment. He sensed the great potentials of cordyceps sinensis from a single story. Influenced by the trend of developing resources in “mountains and oceans”, he resolutely devoted to the research and development of cordyceps sinensis.

Domestic cleaning technology for cordyceps sinensis was outdated, as a result of which, most essences of cordyceps sinensis were lost in the cleaning process. Therefore, a professional business thinking became necessary. Zhang Xuefeng was determined to develop the most effective cleaning method. He succeeded after “wasting” cordyceps sinensis with the value over millions Yuan. Zhang Xuefeng thus changed from a “manager” into a “scientist”. That was closely related to his well-educated, studious and adventurous personality characteristics (analysis of the questionnaire showed that he had high level of risk propensity).

At that stage, Qinghai Spring’s bold technical innovation brought landmark change to cordyceps sinensis industry. According to MS strategy classification, Qinghai Spring’s strategic choice at that stage, was exploratory strategy.

At the second development stage, Qinghai Spring cooperated with well-known foreign pharmaceutical companies. Backed up with strong technologies learned from the cooperation, Qinghai Spring developed the technology of compressing pure cordyceps sinensis powder into tablets, developed the Very•grass 5X series products, and implemented of “brand” positioning strategy and marketing strategy. At that stage, Zhang Xuefeng’s strategic decision changed from predicting strategy into analyzer strategy. While maintaining existing market,
products and consumers, Qinghai Spring was actively in new products development and market exploration. It maintained stable efficiency and flexibility of change through technological innovation.

At the third stage, relevant policies on cordyceps sinensis has been uncertain. The cordyceps sinensis business has been “blackened” several times, and the identity of cordyceps sinensis has to be changed accordingly. Especially after the backdoor listing, Zhang Xuefeng suffered the troubled times. The State Food and Drug Administration warned in the official website that arsenic content of cordyceps sinensis exceed that of the national safety standards. Qinghai Spring once again fell into the questioned situation. In this incident, Zhang Xuefeng’s tough style was expressed exhaustively. He even published two announcements to “challenge” regulatory authorities, claiming that “consuming tips from the Food and Drug Administration lacked of evident”. However, this initiative brought the suspension of the pilot program of using cordyceps sinensis as health food from the Food and Drug Administration.

In face of this crisis, Qinghai Spring is clearly reluctant to “wait passively for demise”. Taking advantages in the development and sales of cordyceps sinensis, its subsidiary Qinghai Medicinal started cooperation with Sanpu Pharmaceutical to increase market share and accelerate the development of new health care products to ensure the sustainable development of Qinghai Spring. Strategic choice of Qinghai Spring at this stage remains analyzer strategy.

In summary, the changing of Qinghai Spring from exploratory strategy at the first stage to analyzer strategy at the second and third stages has close relationship with Zhang Xuefeng's locus of internal control, high need of achievements and high risk propensity. CEOs with locus of internal control believe that event consequences can be controlled or predicted, thus the accurate predictions and support from the group can promote individuals’ investment from individuals in their work. Studies have found that people with a high level of risk propensity feel natural in an uncertain environment. Zhang Xuefeng admitted in a public speech that, “establishing an enterprise is to see a bigger picture and the coming future, thus predictable issues and difficulties that may not encountered can be spotted.” It is his personality characteristics that lead Qinghai Spring to go through all the suffers.
Chapter V Cross-case Analysis

5.1 Analysis of influences of CEO personality characteristics on strategic choices of sample enterprises

According to analyses of the questionnaire, interviews and other data, we have collected high frequency vocabulary describing CEO personality characteristics, managerial cognition and strategic behaviors of four pharmaceutical companies, based on which, theoretical models are established, as shown in Figure 5-1, Figure 5-2, Figure 5-3 and Figure 5-4.
Figure 5-2 Theoretical model of Sunflower Pharmaceutical (word frequency)

Strategic choice

Independent innovation (36)
Brand strategy (13)
Technological innovation (42)
“Three-step” Strategy (9)
Large Health Strategy (18)
Internationalization (10)

Managerial cognition

Innovation (27)
New drugs development (19)
Increase competitiveness (20)
Seek for new profit growth points (9)

Personality characteristics

Composed (38)
Practical (28)
Courage & resourcefulness (13)
Wisdom (32)
Innovation (45)
Adventurous (21)

Figure 5-3 Theoretical model of Yabao Pharmaceutical (word frequency)

Strategic choice

Technological innovation (29)
Brand strategy (18)
Marketing strategy (27)
Increase market shares (16)
New products development (22)

Managerial cognition

Transformation (24)
Professional (21)
Increase competitiveness (18)

Personality characteristics

Bold (53)
Low profile (38)
Overbearing (28)
Uncompromising (32)
Determined (14)
Self-confident (18)

Figure 5-4 Theoretical model of Qinghai Spring (word frequency)
After analyses of the questionnaire, we have found that all the four CEOs show high levels in openness, locus of control, need of achievement, risk and narcissism propensity. Except for the narcissism propensity, they have similar scores for the other four personality characteristics.

![Figure 5-5 Comparisons of CEO personality characteristics](image)

1. CEO’s openness and its influences on strategic choices of pharmaceutical enterprises

CEO’s openness to experience, among the five major personality characteristics, has greatest impacts on strategic choices of enterprises. CEO’s openness can nurture an incentive mechanism that supports strategic change and innovation. The process of strategic change is the process of partial or overall change of conventions. On the one hand, CEOs with openness to experience are willing to try new things, take the initiative to think about new, unconventional ideas and accept ideological challenges. Their subjective initiative in thinking and behavior is the source of change of conventions. CEOs with openness to experience have the traits of transformational leadership, rich imagination, and the courage to challenge the traditional. They take initiatives to design the future for the organization. As for the decision-making style, leaders with a high level of openness are more likely to accept innovation, and have higher decision-making flexibility. In addition, CEOs of the four sample companies are also founders of the enterprises. Being entrepreneurs, they have significantly high level of openness to experience than managers, and are more willing to accept changes, to challenge risks, and have stronger motivation to start businesses.

Since individuals with openness to experience are willing to accept new ideas and information rather than existing rules, the openness to experience contributes innovation for organizations. Innovation requires constant trials and errors, which calls for flexibility and learning from experience. Therefore, leaders with high level of openness to experience are more likely to achieve success. For example, Steve Jobs put forward the idea of “staying hungry, staying foolish”, which is closely related to Apple's high-density innovation activities. Environmental uncertainties is the controllable variety of influences of openness to experience on the the
performance of the organization. The sensitivity to external information and abilities to explore and seek for knowledge may help to anticipate and respond to organizational changes, so it may facilitate leaders to adapt to the changeable environment.

The questionnaire employs 6 indicators to measure the four CEOs’ openness to experience. Likert-7 scale is used to evaluate the specific indicator. 0 indicates that the respondent has the opposite opinion to the specific indicator. On the contrary, a larger value indicates a more positive opinion. The overall score summarized from each indicator is the score of that personality trait. Table 5-1 details the measuring table of openness to experience.

Table 5-1 Measuring table of openness to experience of CEOs of the four sample enterprises

<table>
<thead>
<tr>
<th>Item</th>
<th>Li Anping</th>
<th>Guan Yanbin</th>
<th>Ren Wuxian</th>
<th>Zhang Xuefen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Once I found the right way to do something, I would follow</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2. I am fascinated by patterns found in the arts and nature</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>3. Poetry has no or little influence on me (R)*</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>4. I often try new and foreign foods</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>5. I have no interest in thinking about the nature of the universe or the human environment (R)</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I have a lot of curiosities</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>6.2</strong></td>
<td><strong>5.8</strong></td>
<td><strong>6.0</strong></td>
<td><strong>6.0</strong></td>
</tr>
</tbody>
</table>

Notes: * (R) means the intention of the item was the reverse, and scores in the table had been reversed; similarly hereinafter.

Table 5-1 lists scores of openness to experience of CEOs of the four sample enterprises-- 6.2 for Li Anping from Zhendong Pharmaceutical, 5.8 for Guan Yanbin from Sunflower Pharmaceutical, 6.0 for Ren Wuxian from Yabao Pharmaceutical, 6.0 for Zhang Xuefeng from Qinghai Spring. All the four CEOs have very high levels of openness to experience.

CEO Li Anping of Zhendong Pharmaceutical boldly invested in the oil industry, and finally focussed on the pharmaceutical industry. CEO Guan Yanbin of Sunflower Pharmaceutical created the “Gaint Sunflower”. CEO Zhang Xuefeng of Qinghai Spring created “miracle of ‘very grass’ products”. All the decisions made by them are matched with the market environment at that time, demonstrating that their quick response to the change of complicated external environment. They can sense opportunities, and make corresponding strategic decisions. In particular, Yabao's CEO Ren Wuxian, after taking over Ruicheng Pharmaceutical, conducted sweeping reforms on the management system, product structure and marketing model, revitalizing Ruicheng Pharmaceutical, which was on the verge of bankruptcy. These are closely related to CEO's level of openness to experience.
2. CEOs’ locus of control and its influences on strategic choices of pharmaceutical enterprises

CEO’s locus of control has a significant impact on strategies. Leaders with internal control tendency are more proactive, confident, independent, and less likely to be influenced by authorities. They are more likely to engage in risky and innovative activities, and take the initiative to redesign the organization, in order to reduce environmental constraints and maximize personal control. Table 5-2 details the measuring table of locus of control.

Table 5-2 Measuring table of locus of control of CEOs of the four sample enterprises

<table>
<thead>
<tr>
<th>Item</th>
<th>Li Anping</th>
<th>Guan Yanbin</th>
<th>Ren Wuxian</th>
<th>Zhang Xuefeng</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can foresee the difficulties that will occur and take actions to avoid it.</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>I can control my problem only with external support (R).</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Some of my problems will dominate me in my whole life (R).</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I have the responsibility to deal with my mistakes and problems.</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Success is a very difficult task. Luck nearly has nothing to do with success.</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>My life is controlled by external actions and events (R).</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>People become victims of the environment because they cannot control the environment.</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>When I am under pressure, I often feel nervous because of things beyond my control.</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>I will breathe faster and uneven and it is difficult to control when I encounter difficulties.</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>6.0</td>
<td>5.8</td>
<td>5.7</td>
<td>6.2</td>
</tr>
</tbody>
</table>

It can be found that the four CEOs have strong internal control tendencies. Facing the complex external environment, they have the courage to challenge and innovation.

It can be found that the four CEOs have strong internal control tendencies. Some focus on product innovation, some on marketing innovation. Although focusing on different aspects, they share common in preferring risks and guiding competitions in the industry rather than following other competitors. Therefore, the four sample companies show relatively strong abilities in product innovation, future-oriented transformation and flexible approach to problem-solving.

The four CEOs repeatedly mentioned adventurous, meeting challenges, improving competitiveness, product and technological innovation in interviews. According to statics, CEO Li Anping of Zhendong Pharmaceutical mentioned adventurous 35 times, CEO Guan Yanbin of Sunflower Pharmaceutical 42 times, CEO Zhang Xuefeng of Qinghai Spring 53 times, and CEO Ren Wuxian of Yabao Pharmaceutical 21 times. As for the competitiveness,
CEO of Zhendong Pharmaceutical mentioned it 17 times, CEO of Sunflower 23 times, CEO of Qinghai Spring 18 times, and CEO of Yabao 20 times. As for innovation, CEO of Zhendong mentioned it 21 times, CEO of Sunflower 24 times, CEO of Qinghai Spring 29 times, and CEO of Yabao 42 times. The data show that CEO Zhang Xuefeng of Qinghai Spring is the boldest CEO, and CEO of Sunflower comes the second. CEO of Yabao Pharmaceutical mentioned adventurous the least times, but mentioned innovation the most, which is related with its CEO Ren Wuxian’s background of being a technologist before, and his composed and pragmatic personalities. All these have fully demonstrated influences of CEOs’ internal control tendency on strategic choices.

3. CEO’s need of achievement and its influences on strategic choices of pharmaceutical enterprises

It is found that a person with higher need of achievement likes to challenge himself and try to solve problems. They often take the time to think about how to do things better. They are more willing to work in an organized environment so that they can get concrete and quick feedback of their own efforts. Moreover, CEOs with higher need of achievement are more proactive and emphasizing on strategic analyses. They prefer the formal and complex organizational structures. As for the strategic choice, they are likely to take the popular and marketing-oriented strategies. The details of the questionnaire are shown in Table 5-3:

Table 5-3 Measuring table of need of achievement of CEOs of the four sample enterprises

<table>
<thead>
<tr>
<th>Item</th>
<th>Li Anping</th>
<th>Guan Yanbin</th>
<th>Ren Wuxian</th>
<th>Zhan Xuefeng</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Work that I do not know whether I will be successful or not is most attractive to me.</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2. I do not like occasion which measures my ability (R).</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>3. I will worry about the work which I do not know if I am competent (R).</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>4. I feel uneasy in the situations which will measure my ability (R).</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>5. I do not like to work in an unfamiliar environment, even though nobody knows (R).</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I want to do the work which needs my ability.</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>6.0</td>
<td>6.0</td>
<td>5.8</td>
<td>6.2</td>
</tr>
</tbody>
</table>

It can be seen that CEOs of the four sample companies aim to succeed. They have successful expectations during the work, and take initiative to guide planning in teamwork. They insist to complete the work once started. They enjoy working, get satisfaction from working and pursue self-achievements. These have shown that the four CEOs have relatively high need of
It can be found that the four CEOs have relatively high need of achievement. Strategic behaviors of their enterprises also indirectly confirmed that. Among the four sample enterprises, Sunflower Pharmaceutical and Qinghai Spring are typical marketing strategy-oriented enterprises. Sunflower Pharmaceutical chose marketing strategy at the initial stage. Its unique “guerrilla tactic of advertising-driven, prescription-led, and OTC-driven” portfolio marketing strategy filtered into people’s minds. Qinghai Spring has advanced marketing idea. It deploys marketing channels according to the increasing market size of cordyceps sinensis, so as to meet the growing demand. Meanwhile, its revenue achieves rapid increase via advertising. After expanding oil stations at the initial stage, Zhendong Pharmaceutical shifted focus to how to find new business areas. It acquired pharmaceutical enterprises, and then made use of marketing to promote its self-developed “Yanshu” products to one the eight drugs for SARS recognized by the Ministry of Science and Technology, thus opening up more opportunities. Moreover, the four pharmaceutical companies expand scales and achieve more products through mergers and acquisitions as well as integration of organizational structure. Zhendong and Yabao, in particular, achieved rapid development after mergers and acquisitions. These strategic behaviors show that CEOs of the four sample enterprises are very proactive and active in making strategic decisions, which have a certain relationship with their high need of achievement.

4. CEO’s risk propensity and its influences on strategic choices of pharmaceutical enterprises

Risk propensity is a personality characteristics of leadership related with strategic structure of the organization. Strategic decisions are filtered and determined by senior managers, thus are influenced by personality characteristics of strategic leaders' risk propensity. Senior managers perceive risks, and their orientation of risks strongly influences the orientation of enterprises. The results of the questionnaire on risk propensity of CEOs of the four cases are shown in Table 5-4:

<table>
<thead>
<tr>
<th>Item</th>
<th>Li Anping</th>
<th>Guan Yanbin</th>
<th>Ren Wuxian</th>
<th>Zhang Xuefeng</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Like to try new things</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2. Pursuit excitement and like adventure</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>3. Adventure is necessary and worthwhile as long as there are the corresponding benefits</td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>4. Like challenges and willing to take some risks for success</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5. Often make decision based on advice given by people I trust</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>6. Good at making bold decisions in the fierce and complex market environment</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>7. I believe that my company should take bold and comprehensive actions rather than timid and</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
step-by-step behaviors to achieve its purpose due to the current environment.

<table>
<thead>
<tr>
<th>8</th>
<th>Our company often takes rapid and bold approaches, instead of &quot;wait and see&quot; attitude, when it is faced with decisions of great uncertainty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Average 6.1 6.6 6.3 6.8

As shown in Table 5-5, CEO Zhang Xuefeng from Qinghai Spring has 6.8 points, the highest score, showing that he has a high level of risk propensity. CEO from Sunflower Pharmaceutical ranks the second. CEOs from Zhendong Pharmaceutical and Yabao Pharmaceutical have a relative lower level of risk propensity. Such results are consistent with word frequency calculated from the interviews. The four CEOs have repeatedly mentioned adventurous and meeting challenges. According to statics, CEO Li Anping of Zhendong Pharmaceutical mentioned adventurous 35 times, CEO Guan Yanbin of Sunflower Pharmaceutical 42 times, CEO Zhang Xuefeng of Qinghai Spring 53 times, and CEO Ren Wuxian of Yabao Pharmaceutical 21 times. CEO Zhang Xuefeng of Qinghai Spring has the highest level of risk propensity, thus the most adventurous one. In order to study how to increase utilization efficiency, he locked himself in the laboratory and finally developed the most effective cleaning technology with the determined mind. CEO Ren Wuxian of Yabao Pharmaceutical is more moderate and rigorous with lower word frequency of adventurous because of its technical background. Data from the questionnaire also show that he has a moderate level of risk propensity.

Most scholars believe that most strategic leaders will take high-risk pursuit and high-risk avoidance mixed behaviours. Senior managers have greater desire than the average public to take risks. There are differences between risk propensity of senior managers, and managers with higher vague tolerance are more willing to take risks. CEOs with lower risk propensity will adopt more criteria in decision-making, while CEOs with higher risk propensity adopt narrower criteria. Furthermore, not only the number of criteria vary, but also types of criterial are different. Thus, risk propensity of strategic leaders will affect types of decision-making criteria.

Facing uncertainties, strategic leaders with higher risk propensity see more opportunities and advantages. They are confident in the development of new things, and willing to take challenges. In order to promote business, they set higher goals, thus entrepreneurial-oriented as a stimulus has more effects. Strategic leaders with higher risk propensity are more likely to choose exploratory strategies and analyzer strategies.

In interviews with four CEOs, they have repeatedly mentioned the courage to adventure and challenges. The word frequency of adventure of CEO Li Anping from Zhendong Pharmaceutical is 35, of CEO Guan Yanbin from Sunflower pharmaceutical is 42, of CEO Zhang Xuefeng from Qinghai Spring is 53, and from CEO Ren Wuxian from Yabao Pharmaceutical is 35. CEO Zhang Xuefeng from Qinghai Spring is the most adventurous and challenging, with high level of risk propensity. In studying on how to improve efficiency of
the use of cordyceps sinensis, he locked himself in the laboratory, making every effort and developed the most effective of cordyceps sinensis cleansing technology. With technical background, CEO Ren Wuxian from Yabao Pharmaceutical is more moderate and rigorous, with the least word frequency of adventure. The survey also shows that his risk propensity is moderate.

5. CEO’s narcissism propensity and its influences on strategic choices of pharmaceutical enterprises

Narcissists are visionary, which makes them good innovators. Self-confident and belligerent CEOs often employ highly risky and innovative strategies, while those CEOs who often feel helpless tend to adopt conservative strategies. It is found that narcissists are particularly sensitive to the immutable things, or willing to pursue various sensory stimulation to overcome the boredom in daily life.

Williams (1965) argued that narcissistic strategic leaders are more likely to employ prospector strategy, since that they tend to be self-confident and belligerent, and tend to choose highly risky and innovative strategies. Domestic scholar Liu Xiangdong (2010) did empirical analyses and proved that strategic leaders with narcissism propensity prefer prospector and analyzer strategies, especially prospector strategy. Data of the questionnaire on narcissism propensity of CEOs of the four cases are shown in Table 5-5.

**Table 5-5 Measuring table of narcissism propensity of CEOs of the four sample enterprises**

<table>
<thead>
<tr>
<th>Item</th>
<th>Li Anping</th>
<th>Guan Yanbin</th>
<th>Ren Wuxian</th>
<th>Zhang Xuefeng</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Power has strong attraction to me</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2. People can learn a lot from me</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>3. Everyone likes to listen to my story</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4. I believe that I will become a great man</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>5. I often become the center of attention although I did not bother to arouse the attention of others.</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>6. Unless I get everything what I deserve, otherwise I will not be satisfied</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>7. I like being the center of attention of others</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>8. I know that I am good, because everyone said so</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. I am born to be a leader</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>10. It's easy for me to make people believe everything I say</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4.3</strong></td>
<td><strong>4.3</strong></td>
<td><strong>4.1</strong></td>
<td><strong>6.2</strong></td>
</tr>
</tbody>
</table>

Table 5-6 shows that Qinghai Spring CEO Zhang Xuefeng's total score is significantly higher than the other three CEOs, indicating that he has a high level of narcissism propensity, while the other three CEOs have a lower level of narcissism propensity. It is also summarized that
Zhang Xuefeng has a strong desire to control. Although “very grass” products have always been suffering from quality doubts, he adhered to the high-end line, and never give discounts. The questionnaires show that CEO Zhang Xuefeng of Qinghai Spring has a relative high level of narcissism propensity, and a strong desire to control. Although “very grass” products have always been suffering from quality doubts, he adhered to the high-end line, and never give discounts. When the State Food and Drug Administration released *Consumption Tips on Cordyceps Sinensis Products*, warning that long-term use of cordyceps sinensis would lead to excessive intake of arsenic, and may bring health risks, Zhang Xuefeng “challenged” the statements through open letter and the Internet. These moves do mirror his narcissism propensity. Since uncertain policies on cordyceps sinensis, Qinghai Spring changed prospect strategy at the first stage to analyzer strategy at the second stage, and then back to prospector strategy at the third stage.

5.2 Mediation Effects of Managerial Cognition

When an enterprise is operating in a relative stable and predictable environment, since the environment it faces is clear and with little changes, existing strategies, rules, and practices can be used to solve current and future problems. In addition, because of the linear characteristics of change and predictable future characteristics, the requirements of adjustment, change and innovation for enterprises are relatively low.

But in a dynamic environment, changes of enterprises are nonlinear, complicated and unpredictable. Weick (1995) pointed out that in a dynamic environment, changes in environmental events were always faster than decision makers’ attention or understanding. That is to say, certain things in the environment may change beyond recognition or may no longer exist before decision makers take notice or understand them. Environmental dynamics require companies to nurture and possess dynamic capabilities to search for fleeting opportunities in the environment, to capture such opportunities through dynamic practices, and to adapt to changes in the environment in a timely and rapid manner. Therefore, in a dynamic environment, enterprises with rapid response capabilities can better adapt to environmental changes, access and maintain competitive advantages for a longer time.

The complicated and changeable environment will force strategic decision makers to focus more on environmental events, and to actively think about implications behind environmental events, which will enhance strategic decision makers’ searching and innovative practices, and contribute to the cultivation of dynamic capabilities and adjustments to organizational capacities as well. Adjustments and evolution of organizational capacities are influenced by the managerial cognition of perceiving the outside world. The managerial cognition has significant influences on the cultivation and evolution of abilities by simplifying problems and providing possible behavior choices of enterprises. The author thinks that the theoretic logic of the mediation effects of managerial cognition between CEO personality characteristics and the strategic decisions is that the dynamic trait of the environment determines the characteristics of managerial cognition’s knowledge structure of the strategic decision makers, including the complexity and centralization of the knowledge structure of managerial cognition, while
strategic decision makers’managerial cognition changesenterprises’ strategic choices through conscious and purposeful search for practices.

In the dynamic environment, CEOs’ strategic response speed has an impact on strategic performance (Nerkar and Roberts, 2004; Baum and Wally, 2003). The strategic response speed of an enterprise refers to the timeliness of an enterprise’s response to environmental changes (Barr and Huff, 1997; Nadkarni and Barr, 2008). Opportunities and threats in the environment are fleeting, thus strategic response speed becomes an indicator measuring if enterprises can effectively seize opportunities and eliminate threats in the environment. Companies that respond quickly to environmental events in the dynamic environment are generally better off than those who do not respond quickly (or respond slower) to environmental events (Cotrell and Nault, 2004; Haveman, 1992; Smith and Grimm, 1987). The logical relationship is that the quick strategic response, on the one hand, can help enterprises effectively grasp fleeting opportunities to create profits. That is the “first move advantage” in strategic management. The quick strategic response, on the one hand, can create profits as mentioned before thus achieving the performance higher than the average; on the other hand, for can make competitors flustered, thus gaining profits.

Similarly, in the dynamic environment, companies have to cultivate dynamic capabilities to survive and develop. Researches on how dynamic capabilities affect strategic performance are already well established. Mechanisms of dynamic capabilities affecting enterprises’ strategic performance include the following three aspects. (1) Enterprises with strong dynamic capabilities are often able to respond to environmental changes in a timely manner, thus establishing the first-mover advantage; while enterprises with weak dynamic capabilities respond slowly to the changing market and competitions, thus hard to have competitive advantages. (2) Dynamic capabilities can help enterprises to quickly gain the resources and technologies needed to establish competitive advantages. Dynamic capabilities can only help enterprises to obtain competitive advantages after the acquisition of resources. (3) Dynamic abilities include abilities of dynamic coordination and organization of internal resources to adapt to the changing environment. Enterprise restructuring or integration of internal and external resources makes abilities of the enterprises meet requirements of the changing external environment, which is the heart of dynamic abilities. Enterprises with strong dynamic capabilities can timely adjust internal resources and capacities; while those with weak dynamic capabilities can not timely adjust internal resources and capacities according to requirements of the changing environment, inevitably leading to the loss of existing advantages.

From analyses of Zhendong case, we can see that the birth of Zhendong is because that its visionary CEO Li Anping found the great potential of the new market, and seized the favorable opportunity to devote to the oil industry. Zhendong’s success in the oil industry makes its managerial cognition focused on “scale expansion”. Gradually it grew into the largest domestic private-owned oil chain enterprises. But later, the country continuously restructured and transformed the oil industry, depriving Zhendong gas stations of opportunities to participate in competition. At that time, Li Anping decisively conducted strategic
transformation, and started the second venture. Influenced by the wave of pluralism, Zhendong once set up agricultural products companies, bio-food companies, corn processing companies, and etc., but all failed. Until the acquisition of Shanxi Jinjing Pharmaceutical Co., Ltd., Zhendong officially entered into the pharmaceutical industry, and began to take off. In 2001, the accession to the WTO promoted the reform and opening up of the medicine and health field. Since 2003, China’s pharmaceutical distribution has been fully liberalized, bringing opportunities for the development of pharmaceutical business. At that time, Zhendong’s managerial cognition focused on pharmaceutical industry. Later, Zhendong began to extend to the field of pharmaceutical circulation, and gradually grew stronger. Its idea to develop Chinese herbal medicine bases, the vertical and horizontal integration of the industry, and managerial cognition focusing on the planning of large health industry, suit the macro environment at that time.

The formation of managerial cognition of Sunflower Pharmaceutical at the initial stage was closely related with its CEO Guan Yanbin. Seeing the glorious future of reform and opening up, Guan Yanbin decided to resign his seat in government to be a director of a small brick factory. Later, he turned the factory to produce plastic products. Facing the wave of national industrial enterprises institutional reform, he transformed the factory into a joint-equity one. Later, he acquired the former state-owned Wuchang Pharmaceutical, and established Heilongjiang Sunflower Pharmaceutical Co. Ltd. At that time, Sunflower Pharmaceutical’s managerial cognition focused on “portfolio marketing and national distribution”. Later, in order to cope with the price competition and chaos market environment, Sunflower changed its managerial cognition from “portfolio marketing and national distribution” to “marketing control and brand promotion”. Strategic decisions made under such managerial cognition maintain Sunflower the leading position in the fierce market competition. In the face of the complex external environment with the characteristics of relative unstable policies, the introduction of second child policy and deepening of population aging, in the key development node, Sunflower has developed the development strategy of “enriching varieties as the priority, operating with unique characteristics, mode innovation and the whole industry chain competition”.

Innovation has been emphasized throughout the whole development of Yabao. The formation of managerial cognition of Yabao at the initial stage had a close relationship with personality characteristics and background of its CEO, Ren Wuxian. He spent 13 years in Ruicheng Pharmaceutical. Upon taking up the director of Ruicheng Pharmaceutical at the critical moment, he sweepingly reformed and conducted management system, products and marketing mode innovation, leading to the rapid development. In the first development stage, the focus of Yabao’s managerial cognition was on innovation. With the continuous expansion of market share, Yabao shifted focus of managerial to the development of new traditional Chinese medicine products and brand strategy. In recent years, influenced by the medical system reform, tender price decreasing, introduction of the second child policy, the initiative of “One Belt & One Road”, and the Internet, Yabao once again changes managerial cognition to adapt to environmental changes, and position the development direction in
internationalization, Large Health Strategy and the Internet marketing model. Yabao strives to stabilize existing profits, and at the same time, extends to nourishment, health care products and the Internet field.

Qinghai Spring CEO Zhang Xuefeng’s obsession with cordyceps sinensis technologies made Qinghai Spring’s managerial cognition at the initial stage focusing on “technological innovation”. Later, facing the market confusion, the lack of standard cordyceps sinensis products or dominant brands, Qinghai Spring changed its managerial cognition from “technological innovation” to “brand strategy” and “marketing strategy”. Qinghai Spring has created huge profits. However, due to changes of the external environment, “very grass” series products had to change identities several times, and received doubts. Finally, its production was suspended.

The above analyses show that the four enterprises of Zhendong, Sunflower, Yabao and Qinghai Spring have strong dynamic abilities, can timely adjust internal resources according to the changes of the environment. They can match enterprises’ abilities with the external environment through restructuring, which are inseparable from CEOs’ managerial cognition.

When decision makers judge the environment as an opportunity, they are likely to choose a more aggressive strategy, and tend to take product and service innovation. When decision makers judge the environment as a threat, they will take strategies to avoid risks to reduce losses. Therefore, when decision makers judge the environment as an opportunity, even if not familiar with that industry, they probably choose an aggressive strategy to take the opportunity to expand new business.

Managerial cognition of strategic decision makers is a determinant in affecting enterprises’ strategic response speed. One of the reasons why the enterprise's strategic behavior does not keep up with the environmental changes is the excessive concentration of knowledge structure of managerial cognitive, thus perception of environmental changes being ignored; or having perceived changes in the environment, but the oversimplified concepts and the logical relationship results in slower responses, or even a false response, of strategic behavior to the changes in environment. From the perspective of bounded rationality, the author thinks that managerial cognition of strategic decision makers plays a vital role in the process of enterprises’ selecting strategies to dynamically adapt to the changing environment.
Chapter VIDiscussions and Conclusions

Taking the relative unstable Chinese pharmaceutical environment as the point of penetration, this paper analyzes how personality characteristics of CEO, the main strategic leader, affect strategic choice and strategic performance of the pharmaceutical companies through the case analysis of four Chinese pharmaceutical companies. This chapter will discuss the above mentioned case analyses, and briefly review and summarize conclusions. In addition, combining research results of other scholars and the author’s management experience, suggestions on appointment of CEOs for Chinese pharmaceutical companies under the unstable environment can be found.

First, the author analyzes the foundation and validity of this study, including mechanisms, characteristics, advantages and disadvantages of theories and methodologies employed. That is mainly to illustrate the scientific nature of research methods, the objective authenticity of research materials and objects, and the adequacy of samples. At the same time, the author explains the mechanism of the research method, points out its obvious characteristics, and evaluates its advantages over the traditional methods. Besides, the author described inadequacies of the research method, especially the uncontrollable experimental conditions, as well as obvious limitations.

Second, the author points out, analyzes and interprets the findings, based on the theoretical framework of this study, domestic and foreign literature and the author's practical experience. This part focuses on the theoretical and practical significance of findings of this study, namely what the theoretical values are, how they guide the practice, whether they have the application values, how is the economic benefits and social benefits and etc. The results of this study are compared with the previous literature to further confirms the advanced nature and reliability of the results.

The last part comes the author’s suggestions on further research topics. This part is mainly to discuss the deficiencies of current research, the direction of future efforts and problems to be solved.

6.1 Theoretical framework and validity of the study

6.1.1 Theoretical framework

The author chooses the strategic choice based on managerial cognition as the core theory. The traditional strategic management research argues that different enterprises’ behaviors are determined by objective external reasons, such as resources, industry or transaction costs. However, with the acceleration of the globalization process and the rapid development of the information revolution, the competitive environment faced by enterprises is becoming increasingly complicated, so that enterprises have to shift focus from the external market
environment to the internal environment in the enterprise, pay attention to their own unique resources (including decision makers themselves) and the development and accumulation of knowledge and technology, so as to form enterprises’ unique core competitiveness. The acquisition of core competencies does not depend on the product and market structures, but on how the decision makers, such as CEOs, perceive and interpret the external environment and resources to make matching strategic decisions. In other words, CEOs establish and compare different decision-making proposals based on their understandings of environmental characteristics and changes environmental characteristics. More specifically, CEOs’ perceptions of the environment and the strategic choices are influenced by personal education background, personality, beliefs, values and many other factors. Some of these factors are the daily thinking and behaviors of the senior managers, and some potentially determine their thinking and behaviors. That is also the inherent logic of strategic management schools based on managerial cognition.

It is found that the managerial cognition of CEOs of the four sample enterprises plays an important role in strategic selection and decision-making. Taking Zhendong Pharmaceutical as an example, decisions from trying the oil industry, building the second venture, to entering into the pharmaceutical industry, then to strategic transformation and planning the big health industry, almost all were based on Li Anping’s understanding of the policy environment at that time. For example, Zhendong Pharmaceutical cost huge amounts of money to acquire Kangyuan Pharmaceutical, producing OTC medicine, in 2015. Li Anping was planning that in the “big health” context, using existing approvals were easier to access to the OTC (health care products) field. On one hand, health care products at that stage would avoid the embarrassing situation of prescription drug market where multiple approvals were needed and profits were dramatically reduced; on the other hand, the coming of “big health era” brought promising future for health care products market. Therefore, Li Anping thought that integrating Zhendong’s existing calcium products and Kangyuan's calcium carbonate products as a new series products and the launching of it as the competitive products of “Zhendong” in the future could promote sales of Zhendong’s other OTC products, including health care products of the parent company Zhendong Group. Sunflower Pharmaceutical’s insist on “resources integration to create the whole industrial chain competition” in 2014 was based on Guan Yanbin’s managerial cognition of the low degree of market centralization on the current pharmaceutical industry. Guan Yanbin believes that the capital operation can make the company focus on breed upgrading, thus strengthening the brand strategy. CEO Ren Wuxian of Yabao Pharmaceutical pursues the “distinctive and differentiated” innovation, which is based on his understanding of the existing market and institutional environment. He predicts the future trend of national policies is “to make the public access to cheap drugs, that is to say, enterprises have to reduce profits. We will face great pressure if we only rely on products of this type”. Besides, none of the world’s well-known pharmaceutical companies succeed entirely on the generic drugs. Based on this perception, Ren Wuxian makes technological innovation as a principle of Yabao. Zhang Xuefeng from Qinghai Spring sells the very grass 5X products as the expensive “luxury health care products”, and sets the target customers as those “net liquid household assets above 10 million Yuan, houses or cars excluded”. That is
based on Zhang Xuefeng’s perceptions of the promising future of health care products and the market environment of increasing middle-income groups.

According to the institutional-based view on strategic management, the strategic choice is determined not only by the industry environment and specific resources, but also senior managers’ response to the formal and informal institutional factors. Institutional conditions become a unique external variable that influences strategies of the enterprise; besides industry competition, enterprises resources and abilities. So, how on earth does the system influence the change of strategies? Based on sociology, from the perspective of bounded rationality of senior managers, the institutional factor is an internal variable, and its regulatory, normative and cognitive factors are internalized in the managerial cognition of senior managers, thus influencing enterprises’ strategic decisions.

6.2 Quality and validity of the study

According to Yin (1994), the author uses the following four indicators to conduct a comprehensive evaluation of the quality of this case study.

First is the constructive validity. The author establishes correct and practical measurement of the concepts in the method of word frequency. In the four case analyses, the author uses a variety of sources of evidence to verify the information and then form the evidence chain. Strategies adopted are data collection, report preparation and triangulation verification.

Second is the internal validity. The internal validity is related to the uniqueness of the interpretation of results. If the results have one and only one explanation, the internal validity of the study is high; if there are more than one explanations, the internal validity is low. Therefore, all the factors that lead to any other explanations of the results in the process are threats to internal validity. The author has repeatedly studied the upper echelons theory, strategic choice and other related literature. Combining insiders’ and the author’s own practical experience, the author verifies the results and explains the credibility. The author has reviewed the case studies again and again, and optimized case analyses and interpretations according to feedback from interviewees. The author believes that the internal validity of this study is high.

Third is the external validity. It refers to whether the results of a particular study can be promoted. If the study has a certain degree of external validity, the results can be applied to other situations; if the study has no external validity, then the results are exclusive. Threats to external validity mainly come from three aspects—sampling, artificial environment and repeated research process. This study is a case study of multiple cases. The author takes Chinese pharmaceutical enterprises as sample objects, and chooses some representative enterprises (except Qinghai Spring, the other three pharmaceutical companies has running for more than 10 years and have different focuses on R&D and marketing management; the choice of Qinghai Spring is based on the author’s working experience in the pharmaceutical industry; the ups and downs of Qinghai Spring has a close relation with its CEO’s personality characteristics) to conduct within-case analysis and cross-case analysis. The study takes four cases as study objects. The author believes that the external validity of this study is high,
although it is found that other factors have impacts on strategic choice and performance of pharmaceutical enterprises. The author isolates other influencing factors and comes up general conclusions through the cross-case analysis.

The fourth is reliability. It refers to results consistency of repeated measurement of the same object with the same method. In this study, the author ensures that each step is documented, and can be measured repeatedly. For example, the process of data collection is repeatable and, if this study is conducted again, similar results can be obtained.

6.2 Theoretical and practical verifications

6.2.1 Theoretical implications

Based on the analysis of four cases of Zhendong Pharmaceutical, Sunflower Pharmaceutical, Yabao Pharmaceutical and Qinghai Spring, the study identifies the logical connection between personality characteristics and managerial cognition of CEOs and strategic choice and performance of pharmaceutical enterprises. The author has the following understandings of impacts of CEO characteristics, personality characteristics in particular, on the strategic choice and performance of Chinese pharmaceutical enterprises.

(1) CEOs of pharmaceutical enterprises are not “rational persons” assumed, but bounded rational under the uncertain environment. Chinese pharmaceutical companies are currently in a dynamic and uncertain environment. Policies and regulatory mechanisms of pharmaceutical industry are in the adjustment phase. There, for the strategic decision-making CEOs of the Chinese pharmaceutical companies, they often face uncertainties, especially when selecting strategies. Although there are many factors influencing strategic choices, strategic choices of the four CEOs in this same “weak scenario” are not the same, suggesting that complicated decisions are, to a great extent, results of their own limitations and bias, rather than rational analysis based on completed information. Therefore, managerial cognition of CEOs also determines their companies’ understanding of the external environment, thus deciding the construction of strategic issues and answers to strategic questions. However, managerial cognition of CEOs is not immutable, and its formation and change are influenced by the technical and institutional factors in the environment. In the face of the changing environment, senior managers should actively promote the change of managerial cognitive, to achieve dynamic adaptation to environmental changes and maintain competitive advantages in dynamic environment.

(2) The managerial cognition of CEO has a vital influence on the strategic choice and performance of pharmaceutical companies

The bound rational in strategic management emphasizes effects of managerial cognition of senior managers on strategic behaviors of enterprises under the dynamic environment. Under the dynamic environment, senior managers are bound rational. They can not fully understand the external environment and can not have complete expectation of others’ behaviors. Enterprises strategic behaviors and performance depends on the managerial cognition of senior managers. Among the four sample enterprises, the growth of Zhendong Pharmaceutical...
is mainly realized by vertical and horizontal integration, with a certain degree of transaction-driven. The author believes that it has a close relationship with its CEO Li Anping’s managerial cognition of establishing Zhendong by chance-driven. Sunflower Pharmaceutical relies on marketing to create “magic Sunflower phenomenon”, which strengthened its CEO Guan Yanbin’s insist on the managerial cognition of “relying on marketing to promote the brand and varieties”. Accordingly, Sunflower has developed the basic development strategy of “enhancing varieties as the priority”. Compared with Zhendong and Sunflower, Yabao Pharmaceutical takes up the market with its self-developed products, such as “Weinaoluotong” and “Magic Baby Patch”. Such prospector strategy strengthens Ren Wuxian’s managerial cognition of “innovation being Yabao’s gene”. The focus on innovation contributes to the core competitiveness of independent innovation of Yabao. Qinghai Spring’s rapid development—from the birth of very grass products, to the business miracle relying on high-density advertising bombing strategy and then to the backdoor listing, almost entirely relies on Zhang Xuefeng’s own efforts. That is closely related with his managerial cognition.

Managerial cognition tells senior managers what information is important, what information should be concerned about, what strategy is recognized by the external environment, what actions will be taken by the other members of the field, whether the action will be supported or objected by the public. Based on that, it analyzes and explains events and the environment, and ultimately facilitates senior managers to make decisions to take effective actions. As pointed out by Chen Chuanming, “enterprises’ strategic adjustments are determined by entrepreneurs for enterprises. However, it is the perceived environment and resources rather than objective environment or resources that influence enterprises. Entrepreneurs establish and compare different decision-making proposals according to their understandings of environmental characteristics and changes of that.” Managerial cognition of senior managers influences enterprises’ strategic behaviors rather than the environment itself.

(3) CEO personality characteristics influence strategic choices and performance of enterprises through managerial cognition

Bounded rational is an important feature of decision-makers. Facing huge amounts of potential information, the CEO, as a decision-maker, can only perceive a limited part and have to give a special explanation to the perceived information. In fact, CEO’s strategic selection process is a process of perceiving, and this process includes a series of steps. First, managers can not perceive all aspects of the organization or the environment. The vision of the manager is what the decision maker will see and listen to. Decision makers can only concern about limited areas, which becomes an important limitation of their ultimate perceptions. Second, since the individual can only selectively perceive a limited part of the phenomenon, namely what is actually seen and heard, resulting in a limited vision, thus perceptions of managers will be further limited. Finally, the perceived information is filtered and interpreted based on CEOs’ cognitive basis and values, namely what meanings are given to what is heard and seen. However, the filtering process is influenced by the “positioning” of decision makers, which is the basis for decision makers to interpret the strategic situations and determine methods of
behaviors. Personality characteristics as part of the psychological characteristics, to a large extent, affect CEOs’ “positioning”. Of course, CEOs’ experience will affect their personality characteristics, values, and management philosophy, thus fundamentally affecting their decision-making behaviors and strategic decisions.

(4) Different CEO personality characteristics have different impacts on strategic choices of enterprises

CEOs make strategic decisions and put them into practice, taking the responsibility of adjusting strategic behaviors according to different development needs, thus playing a vital role in establishing strategies. Strategic choices are the reflection of CEOs’ perceptions and values. CEO personality characteristics have an important impact on strategies of enterprises.

It is found that personality characteristics of strategic leaders have a significant impact on strategic choices and performance of pharmaceutical companies. Locus of control, higher need of achievement, risk propensity, narcissism propensity and openness of experience promote strategic performance, especially the higher need of achievement. The author believes that CEOs with the tendency of internal control, high levels of risk propensity, narcissism propensity and openness of experience are more likely to choose prospector strategy. Among them, internal control has a greater impact on strategic choices. It shows, to some extent, that CEOs with high level of internal control tendencies are more active, confident, independent, less likely to be influenced by authorities. They are more likely to engage in risky and innovative behaviors, and good at redesigning the organization, to maximize personal control. Therefore, they are more likely to emphasizing advantages of pioneers, brand awareness and innovation. They maintain a high degree of sensitivity to changes of customers’ demands. They take risks as opportunities and advantages, and fight to become market leaders rather than followers.

CEOs with a high level of risk propensity also strongly influence the strategic direction of the enterprise. They are more likely to choose decision-making proposals with high level of uncertainty, thus preferring to prospector strategies with higher risks. Narcissistic CEOs are self-confident and militant, thus more likely to choose risky and innovative strategies, namely prospector strategy. CEOs with a high level of “openness” are more willing to try new activities, explore new management models, seek for novelty and diversity, and has a strong thirst for knowledge. They have abilities to analyse and good at analyzing. They are open-minded, willing to think about unconventional ideas, and prefer to challenge authorities and tradition ideas. Therefore, they are more likely to adopt prospector strategies.

CEOs with an external control propensity are more likely to choose a defender strategy, indicating that strategic leaders with external control propensity are more passive and anxious. They have more belief in fate, are vulnerable to guidance and more suitable for stable environment. They lack self-confidence, focus on a single relatively narrow market segment, and steadily provide a set of limited standardized products and services. They seldom research or develop new products and new markets. They emphasize operational efficiency and scale economies. They take low price and high quality as a means of competition, thinking that the
focus on existing markets and products can bring success. It is found that CEOs with high level of risk propensity seldom choose defender strategy, and that need of achievement and narcissism propensity have no significant impacts on the selection of defender strategy.

CEOs with internal control propensity, high levels of risk propensity, narcissism tendencies, and openness of experience are likely to choose analyzer strategy. It suggests that analyzer strategies have both characteristics of defenders and prospectors. Enterprises that perform analyzer strategies collect comprehensive data and try best to come up with solutions. It can be applied to dynamic and uncertain environment so as to maintain the flexibility to respond to environmental changes, and focus on new products development and exploring opportunities. CEOs who choose analyzer strategies, on one hand, maintain existing markets to obtain stable returns, on the other hand, innovate cautiously. It is worthy to mention that their innovation is different from that of prospectors. Their innovation usually is to imitate and improve the early products of prospectors in established markets, only with lower risks of innovation.

6.2.2 Practical implications

In the context of the increasingly dynamic environment of the pharmaceutical industry, this study discusses impacts of CEO personality characteristics and managerial cognition on strategic choices and performance realization pharmaceutical companies. Results of the case study show that CEOs’ personality characteristics, such as need of achievement, locus of control tendency, narcissism propensity, risk propensity and openness of experience, influence strategic choices of pharmaceutical companies. CEOs’ managerial cognition plays an intermediary role in the process. The author believes that strategic decisions of enterprises are the combination of CEO the individual (personality characteristics, behavioral characteristics, managerial cognition, and etc.) and the changing environment (dynamic environment). Undoubtedly, if pharmaceutical companies want to make right strategic decisions and choose effective strategies in an uncertain environment, they must consciously choose suitable CEOs for enterprises, and actively enhance the level of cognition of CEOs so that they can timely and efficiently perceive of opportunities and threats brought by the dynamic environmental, thus appropriate strategic decisions to be made at the right time. This study has the following implications to the management practice of pharmaceutical enterprises, especially the strategic management practice.

(1) For enterprises

Results of this study show that some personality characteristics of CEOs of pharmaceutical companies are related to strategic choices. Pharmaceutical companies, during the selection and training of CEOs, should consciously examine variables reflecting CEO personality characteristics according to the company's future vision and long-term strategic goals. If necessary, scientific tests of CEO personality characteristics with some mature personality development scale tables should be taken. Take it as the fundamentals of decision-making, and consciously provide CEOs opportunities for self-improvement. According to the flexible view of strategic research, not a strategy enjoys a general superiority, but should consider specific
environmental and organizational contexts. At the same time, the implementation of strategies has very close relationship with CEOs. Therefore, there is a matching relationship between personality characteristics of the CEO and strategic choices of the enterprise. Therefore, the author believes that the matching of CEOs’ personality characteristics with strategic orientations facilitates the organization to establish goals, optimizes resource allocation, get advantages, and adapt to changes in the external environment, thus ultimately improving performance.

(2) For individuals

Professional managers should consciously cultivate the characteristics conducive to enhancing their competitiveness. Although it is generally believed that personality characteristics are difficult to change, some individual’s observable experience (age, educational level, functional background, and etc.) may affect CEOs’ managerial cognition, thus influencing strategic choices and performance of enterprises. Therefore, CEOs of pharmaceutical companies can increase their competitiveness by consciously cultivating personal experience and work experience.

Hambrick and Mason (1984) suggested that managers' work experience forms part of their emotions, preferences and perceptions, determines the efficiency of the manager or the entire management team, and influenced the type of strategies they chose. Therefore, CEOs often make strategic choices based on the managerial cognition formed by previous work. However, over-reliance on previous experience may reduce the effectiveness of strategic choices, which does not contribute to the improvement of performance. Therefore, CEOs should avoid path dependence or making suitable choices for business development.

6.3 Limitations and expectations

6.3.1 Limitations

This study discusses influences of CEOs’ managerial cognition on strategic choices and performance from the perspective of case study and empirical study, and comes up with practical conclusions and implications. Due to limited experience, limited access to data, and other reasons, this study also has some limitations.

(1) The study mainly uses the method of case study to conduct multi case comparative study. Although these methods have great advantages in establishing theories, it is undeniable that there are many inherent flaws. Moreover, the involvement of psychological increases possibilities of hiding information. In addition, the design of interview outlines and interviews, and interviewees’ answers to the questions are more or less subject to their own subjective emotions, and is difficult to achieve an objective state.

(2) As for case selection, cases selected in this paper are limited to the pharmaceutical enterprises that the author knows and is familiar with. Although it can improve the quality of interviews and information accessibility, bias and errors are inevitable due to the author’s limited cognition and subjectivity. If other enterprises that the author has no connection with
are studies as samples, it is believed that the conclusions of this study will be more abundant and more convincing.

(3) The subjectivity of qualitative research. The quality of case studies can be enhanced by using public data and triangulation, but the subjective consciousness of researchers will also be subjective in qualitative research. This study uses a qualitative research approach, limitations of which is the author’s subjectivity often affect the reliability and validity of the results.

6.3.2 Expectations

(1) This study mainly adopts the method of qualitative case study, lacking of data analysis and universal support. It is suggested that other scholars can adopt both the qualitative and quantitative research method, follow the basic research ideas of literature review, research models and propositions, data collection, empirical analysis and conclusions. Quantitative analysis can use the questionnaire and Delphi method to expand surveying scope and verify the scale and model through statistical analysis. SPSS statistical software was used to analyze the data, and to verify the reliability and validity of the questionnaire to modify the accuracy and universality of the model.

(2) Introduce factors such as resources and life cycle to study the relationship between managerial cognition and strategic choices and performance. Enterprises will inevitably experience different life cycle in its development cycle— the initial start-up stage, the development stage, maturity stage, and recession stage each with its unique characteristics. To explore effects of entrepreneurs’ cognition on strategic behaviors of pharmaceutical enterprises, it is a must to study impacts of entrepreneurs’ cognition on strategic behaviors at every different stages.

(3) To further examine the relationship between CEOs’ managerial cognition characteristics and enterprises’ strategic behaviors. It is suggested that from perspectives of information collection, processing and application, to study managerial cognition’s micro-mechanism on information collection, processing and application, and associating it with strategic behaviors, to study characteristics of managerial cognition in the process of strategic decision-making. It is suggested to further study impacts of managerial cognition on strategic decision-making at various stages, and then to summarize a set of cognitive characteristics that are universally applicable to strategic decision-making of enterprises, in order to more clearly guide the practice.
Appendix I Overview of Case Enterprises

(1) Sunflower Pharmaceutical Group Co., Ltd.

Sunflower Pharmaceutical Group Co., Ltd. is a private pharmaceutical enterprise group mainly engaged in Chinese patent medicine, involving chemical drugs and biological drugs and integrating manufacturing, marketing and scientific research of drugs. Now the company owns 20 subsidiaries, including 10 drug manufacturing enterprises, 4 pharmaceutical enterprises, 1 drug research institute, 1 medicinal materials planting base and 1 drug packing materials company. Up to 2014, the total assets reached RMB3.733 billion Yuan.

Sunflower Pharmaceutical was successfully listed in GEM of Shenzhen Stock Exchange on December 30, 2014. Now it is a member enterprise directly affiliated to All-China Federation of Industry and Commerce, a member unit of China Association of Traditional Chinese Medicine and the Key Hi-tech Enterprise of Nation Torch Plan. In 2014, it was ranked among “Top 100 Enterprises of Chinese Pharmaceutical Industry”, “Top 50 Enterprises of Chinese Pharmaceutical Growth” and “Top 20 Enterprises of Chinese Listed Pharmaceutical Companies”.

Relying on brand, sales network and marketing mode to develop core varieties and drive marketing advantage of competitive development of categories is the core competitiveness of Sunflower Pharmaceutical. Firstly, variety resources are core resources of Sunflower Pharmaceutical. The company and its subsidiaries totally have 15 dosage forms and 1,085 varieties of “Quasi” drugs, including 22 exclusive varieties. 531 drugs have been listed in the National Drug Reimbursement List and 295 drugs have been listed in essential drug list, creating the six product groups of medicine for digestive system, medication for children, drugs for respiratory system and cold, gynecological medicine, medicine for rheumatoid bone disease and medicine for cardio-cerebrovascular diseases. Focusing on the above-mentioned product groups, 6 varieties with more than 100 million of sales have been formed; 48 varieties with more than 10 million of sales have formed good product echelon. Secondly, in respect of brand, Sunflower Pharmaceutical takes the advantages of advertising, academic promotion, terminal and ground brand construction to carry out three-dimensional brand publicity, improve the main brand value of trademark “Sunflower” and rapidly develop sub-brand trademarks like medication for children of little sunflower series. At present, the trademark “Sunflower” has been recognized as “China Famous Brand”, which makes it have extremely high popularity among the public. Thirdly, Sunflower Pharmaceutical has established the marketing network covering the whole country. The company adopts the mode of portfolio marketing and control marketing, owns 8 sales divisions of brand, conventional drugs, prescription drugs and essential drugs, as well as more than 2,000 marketing personnel. It has established nearly 200 provincial sales teams covering 300,000 retail drug stores and the coverage rate of terminal exceeds 70%.
In addition, Sunflower Pharmaceutical put forward the medium-long development plan of “promoting resource integration and creating the whole industry chain competition” in 2014 to extend the front end of industrial chain to GAP base and the back end of industrial chain to pharmaceutical business and terminal chain pharmacies based on enterprises of pharmaceutical industry. In 2015, it successively acquired three companies of Longzhong Pharmaceutical, Wanyuan Pharmaceutical and Jianjin Pharmaceutical. In the future, Sunflower Pharmaceutical will also accelerate investment and merger to realize explosive growth.

(2) Yabao Pharmaceutical Group Co., Ltd.

Yabao Pharmaceutical Group Co., Ltd. (hereinafter referred to as Yabao Pharmaceutical), a comprehensive enterprise group integrating the R&D, production and sales of Chinese and western medicine, was successfully listed in Shanghai Stock Exchange in 2002 and consists of 5 branches, 12 holding companies and nearly 6,000 employees. In 2014, its business revenue reached RMB1.8 billion Yuan.

The company mainly produces 11 dosage forms such as Chinese and western medicine preparations and active pharmaceutical ingredients involving more than 300 kinds of product with modern production of traditional Chinese medicine as focus and biological drugs and chemical drugs as support, and has formed several series of product groups such as medicine for cardio-cerebrovascular diseases, gynecological medicine and medication for children. The company has become one of the Top 50 key industrial enterprises of Chinese patent medicine.

Yabao Pharmaceutical is a typical R&D-oriented enterprise. The annual R&D investment occupies more than 5% of annual business revenue and there are over 200 professional R&D personnel. In fact, the initial development of Yabao Pharmaceutical relied on the patented product “Paste for Babies” (Bao Bao Yi Tie Ling), later renamed as “Ding Gui Pediatric Navel Paste” (Ding Gui Er Qi Tie) developed in 1993. The product occupies more than 90% of market shares of domestic drugs for external use of children and contributed 56% of profits for Yabao Pharmaceutical. In recent years, under the background of continuous improvement of essential medicine institution by national medical reform, Yabao Pharmaceutical put forward the transformation from the focus on Chinese patent medicine and generic drugs to new medicines as well as the long-term plan of internationalization strategy. It successively established Yabao National Technology Center, Beijing Yabao Drug Research Institute, Beijing Yabao Research Center of Traditional Chinese Medicine, Beijing Yabao Work Station of Post Doctorate, Shanxi Work Station of Academician, Yabao Branch of National Engineering Center of Pharmaceutical Preparations and Yabao New Medicine Research and Development Company, etc., and built the three-dimensional research and development network. At the same time, Yabao actively cooperated with international renowned universities, companies and medical institutions for research and development. In 2014, Yabao Pharmaceutical successively signed cooperative projects with Eli Lilly and Company – an international pharmaceutical giant, UK Medical Research Institute, University of South Australia and University of Western Ontario by introducing national talents. In addition, in respect of production technology, all 7 bases of Yabao Pharmaceutical passed national GMP
certification of new edition and international certification such as USA’s FDACGMP and EU’s GMP (at present, there are 4,700 pharmaceutical factories in total, among which, 17 passed USA’s FDA certification and 40 passed EU’s GMP certification. The number of factories passing the two certifications is not more than 10 and Yabao is one of them).

(3) Zhendong Pharmaceutical Co., Ltd.

Zhendong Pharmaceutical Co., Ltd. (hereinafter referred to as Zhendong Pharmaceutical) which is one of the 13 subsidiaries of Shanxi Zhendong Group, is the leading enterprise of the Group and has 8 subsidiaries including medicinal materials planting, research institute and three major drug production enterprises as well as biological health science and technology, household care products and medical logistics center. The company was listed in the GEM of Shenzhen Stock Exchange in 2011. Up to 2014, the total assets of the company reached RMB2.9 billion Yuan and the annual sales revenue reached RMB1.98 billion Yuan.

Starting as a small gas station, Zhendong Pharmaceutical was engaged in pharmaceutical business through acquisition of Jinjing Pharmaceutical Co., Ltd. – a company on the verge of bankruptcy in 2001 and obtained the copyright of Yanshu brand “Compound Kushen Injection”, a kind of anti-tumor traditional Chinese medicine injection; based on “secondary development” of this product through cooperation with scientific research institution, this product became the exclusive core variety of Zhendong Pharmaceutical. Since 2003, Zhendong Pharmaceutical had merged and restructured five pharmaceutical enterprises; it continuously expand business scope and developing new profit increasing points.

For a long time, Zhendong Pharmaceutical attaches importance to technical innovation and product R&D, carries out research and development on new products jointly with a number of scientific research institutions, including Chinese Academy of Medical Sciences, China Pharmaceutical University, National Engineering Research Center of Chinese Compound New Medicines and Shanxi Institute of Traditional Chinese Medicine, and establishes research and development alliance with The Institute of Medicinal Plant Development under Chinese Academy of Medical Sciences, Tianjin University of TCM and other institutes to undertake planned projects supported by national science and technology. In addition, Zhendong Pharmaceutical established several research and development centers through scientific research platform, for example, it established China-Australia Molecular Medicine Research Center with the University of Adelaide, Australia and Shanxi University of TCM, and established the scientific research office of “TCM therapy of tumor” in USA jointly with China Academy of Chinese Medical Science and National Cancer Institute, aiming to continuously improve and upgrade research and development level and promote further development of research and development of traditional Chinese medicine. In 2014, the R&D investment of Zhendong occupied 2.9% of annual business revenue.

However, compared with research and development, marketing is the weakness of Zhendong Pharmaceutical. Although the company has a series of competitive products in anti-tumor field, its marketing efficiency is low on the whole and mainly focused on the independent sales of core products.
(4) Qinghai Spring Medicinal Resources Technology Co., Ltd.

Qinghai Spring Medicinal Resources Technology Co., Ltd. (hereinafter referred to as Qinghai Spring) which was established in 2003 is one of the first batch of 5 pilot enterprises applying cordyceps sinensis in health care food and its core product is the independently developed pure powder of cordyceps sinensis of “very grass · 5X” brand. In 2015, Qinghai Spring was successfully listed in 2015. Up to June of 2015, total assets of the company reached RMB1.84 billion Yuan and business revenue reached RMB540 million Yuan.

In 2004, Qinghai Spring initiated the deep processing and efficient utilization project on cordyceps sinensis. During 2005-2008, the company obtained more than 100 patents for invention focusing on the project. In 2009, series products of “very grass” were launched and the production line passed GMP certification. In 2015, Qinghai Spring realized back-door listing and great-leap-forward development.
Appendix II Interview Outline

CEO interview outline

(1) What is the development status of your enterprise?

(2) What are the important strategic decisions (strategic event and strategic plan) in the development process of the enterprise (further ask questions about details of the important strategic decision: time, location, key figures, process and result of key events and leaders' introspection)?

(3) Can you briefly describe your personal growth experience?

(4) What kind of prominent personality characteristic do you have? Can you choose some key words which can represent your personality characteristics?

Positive; independent, decisive; aspirant; aggressive; efficient; negative; passive; trust to luck; gloomy; strong defensive

In desperate times you will turn to desperate solutions; brave; conservative; too conservative; dare to challenge; full of energy;

Confident, very confident, full of confidence, too confident, have a card up one's sleeve; optimistic, too optimistic; risky, radical, bold, audacious in the extreme, courageous; risk danger in desperation, fling caution to the wind; hoodwink; impulsive; flamboyant; high-sounding, show ability to the full extent; (cautious, low-key and unassertive)

Beyond all expectations, unconventional or unorthodox, innovative; has strong personality, noteworthy conduct and independent character, have your own ideas; do not play by the rules, unimaginable; rebellious

Arbitrary, dictator, absolute master; take care of every single thing personally; suspicious; tough, offensive, lack of inclusiveness, not amenable to reason; not submit to institutional authority

Ambitious; eager to do well in everything, do not admit defeat, like challengers; determined

Insolent, wildly arrogant, conceit, flamboyant, arrogant, profligate and unrestrained, consider oneself always right, supercilious, above one self, egoistic, feel too good about yourself; illiberal, paranoia, extreme; stubborn, do not accept objection, self-assertion, do not accept advice, wheeler-dealer, persist your old ways; ambitious, eager to become world-famous, have ultimate desire to the ultimate success, cherish high aspirations, conceited, dreamlike; tub-thumping, show off, big tone, talk wildly, love bragging and boasting; stick at nothing, high-handed
(5) What do you think about your ability to judge the trend of the market? Based on years of management experience in the pharmaceutical industry, your comprehensive ability to grasp market timing is generally:

A. Higher than average level      B. Lower than average level      C. Average level

(6) Which your personality characteristics will influence these strategic decision, the trend of strategic events and formulation of strategic plan?

(Specific example and details: time, location, key figures, process and result of key events and individual introspection)

(7) Since establishing (or entering) the enterprise, what is the most successful strategic event in your opinion? Which your personality characteristic plays its role and what is the role?

(8) Since establishing (or entering) the enterprise, what is the most difficult event in your opinion? How did the enterprise deal with the event? Which your personality characteristic helps you get through the most difficult time in your opinion?

What is your ability or quality helps you achieve this success?

(9) What do you think of changes in external competitive environment in recent years (since the new medicine and health reform)? What is the influence of these changes on the operation of your enterprise? What is your idea and how do you deal with these changes? What are your expectations for the enterprise's future?

**Colleagues (senior manager and secretary) interview outline**

(1) What are the important strategic decisions (strategic event and strategic plan) in the development process of the enterprise (further ask questions about details of the important strategic decision: time, location, key figures, process and result of key events and leaders' introspection)?

(2) What do you think of your CEO? What kind of prominent personality characteristic does he have? Can you choose some key words which can represent his personality characteristics?

Positive; independent, decisive; aspirant; aggressive; efficient; negative; passive; trust to luck; gloomy; strong defensive

In desperate times he will turn to desperate solutions; brave; conservative; too conservative; dare to challenge; full of energy;

Confident, very confident, full of confidence, too confident, have a card up one's sleeve; optimistic, too optimistic; risky, radical, bold, audacious in the extreme, courageous; risk danger in desperation, fling caution to the wind; hoodwink; impulsive; flamboyant; high-sounding, show ability to the full extent; (cautious, low-key and unassertive)

Beyond all expectations, unconventional or unorthodox, innovative; has strong personality, noteworthy conduct and independent character, has his own ideas; do not play by the rules, unimaginable; rebellious
Arbitrary, dictator, absolute master; take care of every single thing personally; suspicious; tough, offensive, lack of inclusiveness, not amenable to reason; not submit to institutional authority

Ambitious; eager to do well in everything, do not admit defeat, like challengers; determined

Insolent, wildly arrogant, conceit, flamboyant, arrogant, profligate and unrestrained, consider oneself always right, supercilious, above one self, egoistic, feel too good about himself; illiberal, paranoia, extreme; stubborn, do not accept objection, self-assertion, do not accept advice, wheeler-dealer, persist your old ways; ambitious, eager to become world-famous, have ultimate desire to the ultimate success, cherish high aspirations, conceited, dreamlike; tub-thumping, show off, big tone, talk wildly, love bragging and boasting; stick at nothing, high-handed

(3) Which personality characteristics of your CEO you think will influence these strategic decisions, the trend of strategic events and formulation of strategic plan? (Further ask specific example and details: time, location, key figures, process and result of key events and individual introspection)

(4) What is the decision-making process of your CEO in some important decisions? (Please fill " ") in the corresponding answer): 1 totally disagree, 2 strongly disagree, 3 somewhat disagree, 4 generally agree, 5 comparatively agree, 6 very agree, 7 totally agree

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<th>Rely on personal feeling rather than data</th>
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<td>2</td>
<td>Rely on past experience</td>
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<td>Often need to make judgment relying on intuition in the case of insufficient information</td>
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<td>4</td>
<td>Compare alternative programs based on feeling</td>
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<td>5</td>
<td>Collected and mastered much information required for decision making</td>
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<td>6</td>
<td>The quality of the collected information for decision making is very high</td>
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<td>7</td>
<td>Deeply analyze advantages, disadvantages and prerequisite of each program</td>
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<td>8</td>
<td>A lot of alternative programs are considered</td>
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Appendix III Questionnaire

This questionnaire is aimed at exploring effects of personality characteristics of CEO's on strategic choice of pharmaceutical enterprises. The information we collected is only for the purposed of academic research of Tsinghua University and Paris Dauphine University, and will not be disclosed to the public. What you need to do is to answer according to your actual view or perception. Sincerely thank you for your participation and support. May all go well with you!

Part 1: Basic situation of your company

1. Your company has been established:
   - □ less than 2 years  □ 2-5 years  □ 5-10 years  □ 10-15 years  □ more than 15 years

2. The number of employees of your company:
   - □ less than 50  □ 50-100  □ 100-300  □ 300-500  □ over 500

3. Sales amount of your company (ten thousand Yuan):
   - □ less than 1,000  □ 1,000-5,000  □ 5,000-10,000  □ more than 10,000

4. Asset size of your company:
   - □ less than 20 million  □ 20 million - 100 million  □ 100 million - 1 billion  □ more than 1 billion

5. Ownership:
   - □ state-owned / state-owned holding  □ privately operated  □ wholly foreign-owned
     □ Sino-foreign joint venture  □ Other

6. Shareholders constitution of your company:
   - □ appointed by each shareholder  □ elected by the board of shareholders after the shareholders' recommendation
     □ arranged by major shareholders  □ other

7. Please describe ownership structure of your company (please particularly indicate the situation of state-owned shares, private shares, social legal person shares and outstanding shares): ______

___________________________________________________________________________

8. The ratio of shares you hold (including entrusted shareholding with voting right) in the
general share capital is , and the ratio of shares held by top management team (vice-general manager, CFO, chief engineer and above) is.

9. R & D intensity (R & D expenditure / total sales) Index of your company is respectively, , and in 2013, 2014 and 2015.

10. Marketing intensity (advertising cost / total sales) Index of your company is respectively, , and in 2013, 2014 and 2015.

11. Return on assets of your company is respectively , and in 2013, 2014 and 2015.

12. Profit ratio of sales of your company is respectively , and in 2013, 2014 and 2015.

13. Compared with the previous year, growth rate of sales amount of your company is respectively , and in 2013, 2014 and 2015.

**Name of your company:** (if your company is a controlled company / subsidiary company of the group company, please write the name of the controlled company / subsidiary company)

---

**Part 2: Basic personal information**

1. Your age:
   - ☐ younger than 30  ☐ 30-40  ☐ 41-45  ☐ 45-55  ☐ 56 and older than 56

2. Your gender:
   - ☐ Male  ☐ Female

3. Your education background:
   - ☐ doctor  ☐ master  ☐ undergraduate  ☐ junior college  ☐ high school, technical secondary school and below

4. Your title in your company:
   - ☐ chairman  ☐ chairman + general manager  ☐ vice-president + general manager
   - ☐ director + general manager  ☐ general manager

5. When do you establish or enter the company: (for example, 2003). When do you begin to take the position of leader (president / CEO / general manager / other): (for example, 2003).

---

**Part 3: Personality characteristics**

Please read each sentence below, and give answer according to your situation. Please select the figure which can represent your situation (1 totally disagree, 2 strongly disagree, 3
somewhat disagree, 4 generally agree, 5 comparatively agree, 6 very agree, 7 totally agree)

For example, I like mechanical movement

(I) Locus of control

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<th>No.</th>
<th>Content</th>
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<th>7</th>
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<tbody>
<tr>
<td>1</td>
<td>I can foresee the difficulties that will occur and take actions to avoid it.</td>
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<td>2</td>
<td>I think that a lot of things are resulted from chances.</td>
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<td>3</td>
<td>Everyone knows that future is determined by luck and opportunity.</td>
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<td>4</td>
<td>I can control my problem only with external support.</td>
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<td>5</td>
<td>I almost have known how to implement the plan when I make it.</td>
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<td>6</td>
<td>Some of my problems will dominate me in my whole life.</td>
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<td>7</td>
<td>I have the responsibility to deal with my mistakes and problems.</td>
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<td>8</td>
<td>Success is a very difficult task. Luck nearly has nothing to do with success.</td>
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<td>9</td>
<td>My life is controlled by external actions and events.</td>
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<td>10</td>
<td>People become victims of the environment because they cannot control the environment.</td>
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<td>11</td>
<td>I need professional assistance to constantly deal with my problems.</td>
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<td>12</td>
<td>When I am under pressure, I often feel nervous because of things beyond my control.</td>
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<td>13</td>
<td>I believe that one can become the real master of their own destiny.</td>
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<td>14</td>
<td>I will breathe faster and uneven and it is difficult to control when I encounter difficulties.</td>
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<td>15</td>
<td>I can understand why my problems change into another situation from one situation.</td>
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<td>16</td>
<td>I believe I have the ability to successfully deal with the future problems.</td>
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<td>17</td>
<td>I mostly rely on luck to control my problems.</td>
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**(II) Need of achievement**

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<tr>
<td>1</td>
<td>I like to unremittingly make efforts to resolve problems which I have no confidence</td>
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<td>2</td>
<td>I like novel and difficult tasks and I am willing to task risks</td>
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</table>
|3  | I like to work immediately even though there is plenty of time.  
<pre><code>                                                                                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
</code></pre>
<p>|4  | I will be very excited and happy in the face of difficulties about which I am not sure.                                                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|5  | I will be attracted by the work through which I can understand what I can do                                                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|6  | I will be attracted by difficult tasks.                                                                                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|7  | I consider the opportunity which can measure my ability as a spur and a challenge.                                                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|8  | I feel happy when I complete difficult tasks.                                                                                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |</p>
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<td>9</td>
<td>I will put all my energy in difficult activities even though there is no significance.</td>
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<td>10</td>
<td>Opportunity which can measure my ability is attractive to me.</td>
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<td>11</td>
<td>I hope that difficult tasks can be assigned to me.</td>
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<td>12</td>
<td>I like to try my best to complete tasks.</td>
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<td>13</td>
<td>I will soon be interested in somethings if they cannot be understood immediately.</td>
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<td>14</td>
<td>Work that I do not know whether I will be successful or not is most attractive to me.</td>
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<td>15</td>
<td>It is important for me to do something difficult, even though no one knows.</td>
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<td>16</td>
<td>I hate to work if I completely do not know whether I will fail or not.</td>
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<td>17</td>
<td>I will worry about failure if I do not know the result.</td>
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<td>18</td>
<td>I will worry about failure in the face of difficult tasks.</td>
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<td>19</td>
<td>I feel nervous when I think of novel and difficult work.</td>
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<td>I do not like occasion which measures my ability.</td>
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<td>I will worry about the work which I do not know if I am competent.</td>
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<td>22</td>
<td>I do not like to do things that I do not know if I can complete, even though nobody knows.</td>
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<td>23</td>
<td>I feel uneasy in the situations which will measure my ability.</td>
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<td>24</td>
<td>I will be afraid to fail in the face of problems which need specific opportunities to be resolved.</td>
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<td>6</td>
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<tr>
<td>25</td>
<td>I am very worried when I do things which look pretty difficult.</td>
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<tr>
<td>26</td>
<td>I do not like to work in an unfamiliar environment, even though nobody knows.</td>
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<tr>
<td>27</td>
<td>I hope that difficult tasks will not be assigned to me.</td>
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<tr>
<td>28</td>
<td>I do not want to do the work which needs my ability.</td>
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<tr>
<td>29</td>
<td>I do not like to do things which I do not know if I can competent.</td>
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<tr>
<td>30</td>
<td>I will be nervous when I encounter questions which I cannot understand immediately.</td>
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(III) Risk propensity

<p>| | | | | | | | |</p>
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<tbody>
<tr>
<td>1</td>
<td>Like to try new things</td>
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<td>6</td>
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<tr>
<td>2</td>
<td>Pursuit excitement and like adventure</td>
<td>1</td>
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<td>3</td>
<td>Adventure is necessary and worthwhile as long as there are the corresponding benefits</td>
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<tr>
<td>4</td>
<td>Like challenges and willing to take some risks for success</td>
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<td>6</td>
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<tr>
<td>5</td>
<td>Often make decision based on advice given by people I trust</td>
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<td>6</td>
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<tr>
<td>6</td>
<td>Good at making bold decisions in the fierce and complex market environment</td>
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</tbody>
</table>
7. I believe that my company should take bold and comprehensive actions rather than timid and step-by-step behaviors to achieve its purpose due to the current environment.

8. Our company often takes rapid and bold approaches, instead of "wait and see" attitude, when it is faced with decisions of great uncertainty.

(IV) Narcissism propensity

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<tbody>
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<td>1</td>
<td>People often disappoint me</td>
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<tr>
<td>2</td>
<td>Power has strong attraction to me</td>
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</tr>
<tr>
<td>3</td>
<td>People can learn a lot from me</td>
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<tr>
<td>4</td>
<td>I have good taste in beauty-appreciation</td>
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<tr>
<td>5</td>
<td>I like to watch some part of my body</td>
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<tr>
<td>6</td>
<td>Everyone likes to listen to my story</td>
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<tr>
<td>7</td>
<td>I feel null if no one notices me in public</td>
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<tr>
<td>8</td>
<td>I believe that I will become a great man</td>
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<tr>
<td>9</td>
<td>I am willing to become a leader</td>
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<tr>
<td>10</td>
<td>I think that I am a special person, and so I deserve a lot</td>
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<tr>
<td>11</td>
<td>I often think that something is too bad to mention.</td>
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<tr>
<td>12</td>
<td>I often become the center of attention although I did not bother to arouse the attention of others.</td>
<td>1</td>
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<tr>
<td>13</td>
<td>People and things around often make me very dissatisfied</td>
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<td>2</td>
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<td>7</td>
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<tr>
<td>14</td>
<td>I like to be a decision maker</td>
<td>1</td>
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<td>7</td>
</tr>
<tr>
<td>15</td>
<td>Unless I get everything what I deserve, otherwise I will not be satisfied</td>
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<td>6</td>
<td>7</td>
</tr>
<tr>
<td>16</td>
<td>I like being the center of attention of others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
<td>7</td>
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<tr>
<td>17</td>
<td>I like to watch myself in the mirror</td>
<td>1</td>
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<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>18</td>
<td>I often feel that everything around does not seem real</td>
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<td>6</td>
<td>7</td>
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<tr>
<td>19</td>
<td>I believe that I will be a good leader</td>
<td>1</td>
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<td>7</td>
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<tr>
<td>20</td>
<td>I expect a lot from others</td>
<td>1</td>
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<tr>
<td>21</td>
<td>I know that I am good, because everyone said so</td>
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<tr>
<td>22</td>
<td>I envy other people's good fortune</td>
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<tr>
<td>23</td>
<td>I often feel that someone owns something that he/she does not deserve</td>
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<td>6</td>
<td>7</td>
</tr>
<tr>
<td>24</td>
<td>I have the talent to influence others</td>
<td>1</td>
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<td>7</td>
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<tr>
<td>25</td>
<td>I think that it is not easy to find someone appreciates me</td>
<td>1</td>
<td>2</td>
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<td>6</td>
<td>7</td>
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<tr>
<td>26</td>
<td>I often feel that I am useless</td>
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<tr>
<td>27</td>
<td>I am born to be a leader</td>
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<tr>
<td>28</td>
<td>It's easy for me to make people believe everything I say</td>
<td>1</td>
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</tbody>
</table>

**Part 4: Big five personality characteristics**

Please read each sentence below, and give answer according to your situation. Please select the figure from 1-7 which can represent your situation (1 totally disagree, 2 strongly disagree, 3 somewhat disagree, 4 generally agree, 5 comparatively agree, 6 very agree, 7 totally agree)
<table>
<thead>
<tr>
<th>No.</th>
<th>Content</th>
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<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am not an alarmist person</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>I like to have many friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>6</td>
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<tr>
<td>3</td>
<td>I try to treat everyone politely I meet</td>
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<tr>
<td>4</td>
<td>I often feel that I am not so good as others</td>
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<td>6</td>
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<tr>
<td>5</td>
<td>Once I found the right way to do something, I would follow</td>
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<td>6</td>
<td>I often disagree with my family or colleagues</td>
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<tr>
<td>7</td>
<td>I am good at supervising and urging myself to get things done on schedule</td>
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<tr>
<td>8</td>
<td>I feel that I will be torn to pieces when I am under tremendous pressure</td>
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<tr>
<td>9</td>
<td>I am fascinated by patterns found in the arts and nature</td>
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<tr>
<td>10</td>
<td>Some people think that I am selfish and conceited</td>
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<tr>
<td>11</td>
<td>I am not a person good at using method</td>
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<tr>
<td>12</td>
<td>I rarely feel lonely or depressed</td>
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<tr>
<td>13</td>
<td>I really like talking to people</td>
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<td>14</td>
<td>I believe that controversial speech will only confuse and mislead my subordinates</td>
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<td>15</td>
<td>I would rather cooperate with others than compete</td>
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<td>16</td>
<td>I try to complete all the work has been assigned to me</td>
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<td>17</td>
<td>I often feel nervous or tense</td>
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<td>18</td>
<td>I like to stay where there is activity</td>
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<tr>
<td>19</td>
<td>Poetry has no or little influence on me</td>
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<td>I have the tendency to speak sarcastically and doubt the intentions of others</td>
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<td>I have a clear goal and I am achieving it in a structured manner</td>
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<td>Sometimes I feel completely worthless</td>
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<td>23</td>
<td>I often try new and foreign foods</td>
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<td>I waste a lot of time before I settle down to do work</td>
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<td>25</td>
<td>I rarely feel afraid or nervous</td>
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<tr>
<td>26</td>
<td>I often feel that I am full of energy</td>
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<tr>
<td>27</td>
<td>Most people I know like me</td>
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<td>28</td>
<td>I try to reach my goal</td>
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<tr>
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<td>I often get angry at the way others treat me</td>
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<tr>
<td>30</td>
<td>I am an elated and energetic person</td>
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<tr>
<td>31</td>
<td>Some people think I'm cold and calculating</td>
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<td>32</td>
<td>I always think I can persist when I make promise</td>
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<tr>
<td>33</td>
<td>I often feel frustrated and want to give up when things go wrong</td>
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<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>34</td>
<td>I am not an optimist</td>
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<td>6</td>
<td>7</td>
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<td>35</td>
<td>I will feel shocked sometimes when I read poetry or appreciate artistic work</td>
<td>1</td>
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<td>6</td>
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<tr>
<td>36</td>
<td>Sometimes I am not so trusted or relied</td>
<td>1</td>
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<tr>
<td>37</td>
<td>I rarely feel sad or depressed</td>
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<td>38</td>
<td>I have no interest in thinking about the nature of the universe or the human environment</td>
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<td>39</td>
<td>I usually try to be careful and considerate</td>
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<td>40</td>
<td>I always get things done and I am an effective person</td>
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<td>41</td>
<td>I usually feel helpless and want other people to solve my problem</td>
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<td>42</td>
<td>I'm a very active person</td>
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<td>43</td>
<td>I have a lot of curiosities</td>
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<td>44</td>
<td>People never think I am methodical</td>
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<td>45</td>
<td>I occasionally feel ashamed and want to hide</td>
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<td>46</td>
<td>I will rather go my own way than lead others</td>
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<td>47</td>
<td>If necessary, I am willing to manipulate others in order to reach my goal</td>
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<td>48</td>
<td>For everything, I make efforts to be the best</td>
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**Part 5: Strategic choice**

What do you think of the choice your company made for strategy?

1 Totally disagree, 2 strongly disagree, 3 somewhat disagree, 4 generally agree, 5 comparatively agree, 6 very agree, 7 totally agree

**(I) Defense dimension**

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<tbody>
<tr>
<td>1</td>
<td>The company takes maintaining the existing market position as the main target</td>
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<td>2</td>
<td>The company's products and services in a relatively stable range</td>
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<tr>
<td>3</td>
<td>In the face of competition, the company is more likely to improve the quality of products and services and lower prices</td>
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<td>4</td>
<td>The company tends to ignore market changes of the industry which does not directly affect its operations</td>
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<tr>
<td>5</td>
<td>The company is willing to concentrate on the work within a limited range</td>
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**(II) Exploration dimension**

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<tbody>
<tr>
<td>1</td>
<td>The company is committed to developing new products and expanding new markets</td>
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<tr>
<td>2</td>
<td>The company will constantly redefine the scope of products and services</td>
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<td>3</td>
<td>The company is still happy to try new products and markets even though they may not be able to generate revenue</td>
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<td>4</td>
<td>The company can respond quickly to market signals and opportunities</td>
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<td>5</td>
<td>The company will not make efforts to maintain market advantage in all areas</td>
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**(III) Analysis dimension**

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<tbody>
<tr>
<td>1</td>
<td>The company strives to maintain the existing market, and also actively explores new market opportunities</td>
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<tr>
<td>2</td>
<td>The company is often not the first one launches new products or services</td>
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<tr>
<td>3</td>
<td>The company will first pay attention to the performance of competitors in new markets and then consider whether enter or not</td>
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</table>
The company will actively imitate the success factors of competitors

The company will be committed to enhancing the efficiency and profitability based on imitation

(IV) Reaction dimension

1. The company is lack of complete or consistent market orientation and strategic planning

2. The company is more willing to maintain the status quo, rather than actively respond to competition and take risk

3. The company will respond only under unavoidable environmental pressure

Part 6: Environmental uncertainty and strategic performance

(I) The company's performance

What do you think of the performance of your company with regard to the average level of the pharmaceutical industry and what do you think of its reputation in the industry (during the past 5 years)?

1 Totally disagree, 2 strongly disagree, 3 somewhat disagree, 4 generally agree, 5 comparatively agree, 6 very agree, 7 totally agree

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<tr>
<th>No.</th>
<th>Content</th>
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<tbody>
<tr>
<td>1</td>
<td>The company has a good management quality.</td>
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<tr>
<td>2</td>
<td>The quality of products and services of the company is very good.</td>
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<td>3</td>
<td>The value of the long-term investment in the company is very high.</td>
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<td>4</td>
<td>The company has a high creativity.</td>
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<td>5</td>
<td>The company has a very good financial situation.</td>
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<tr>
<td>6</td>
<td>The company is good at attracting, developing and retaining person with ability.</td>
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<tr>
<td>7</td>
<td>The company has a strong sense of responsibility to communities and the environment.</td>
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<td>8</td>
<td>The company rationally uses assets and properties.</td>
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### (II) Environmental uncertainty

What do you think of the following evaluations to the industry environment of the enterprise?

1 Totally disagree, 2 strongly disagree, 3 somewhat disagree, 4 generally agree, 5 comparatively agree, 6 very agree, 7 totally agree

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<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>The environment of our company is very dynamic and rapidly changes in terms of technology, economy and culture.</td>
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<td>2</td>
<td>The environment of our company has a certain risk. One mistake may lead to business failure.</td>
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<tr>
<td>3</td>
<td>The environment of our company rapidly expands due to the expansion of the existing market and the emergence of new markets.</td>
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<tr>
<td>4</td>
<td>The environment pressure of our company is very high and it is difficult to deal with because it is hostile to a certain extent.</td>
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<td>If necessary, I am willing to manipulate others in order to reach my goal</td>
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<td>For everything, I make efforts to be the best</td>
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This is the end. Thanks again for your cooperation!
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DECLARATION

I solemnly declare that the dissertation submitted is the result of my independent research work under the guidance of my supervisor. To the best of my knowledge, the research results of this dissertation do not contain any copyright content other than those already cited in the text. Other individuals and groups that contribute to the research work covered in this paper have been identified in a clear manner.

Signature:__________________________ Date:___________________
Resume

Xia Xiang, born in May, 1974 in Wushan County of Chongqing, deputy to People's Congress of Anning District of Lanzhou City, the President of Gansu Danggui Engineering Research Institute, the Chairman of Gansu Industrial Technology Innovation Strategic Alliance, now is the executive director of Lanzhou Hesheng Pharmaceutical, in charge of the management of Heshengtang pharmaceutical management.

In June 1997, graduated from the Chongqing Medical University majoring medical examination, with a bachelor's degree in medicine. Once served as chairman of the student union. And in August 2006 obtained the Cheung Kong Graduate School of Business EMBA degree.

I started working in September 1997, with 20 years of experience of management and operation in large pharmaceutical enterprises, with a wealth of macro decision-making, management and team leadership experience in large pharmaceutical companies. Have worked in Shenwei Pharmaceutical, Buchang Pharmaceutical Group, Yangtze River Pharmaceutical Group, and other well-known pharmaceutical groups, mainly engaging in pharmaceutical business management. I have unique interpretation of the overall business management, and is familiar with and have rich experience in capital operation, research and development, marketing, supply chain, production, finance and other processes of pharmaceutical business. I have practical experience in the running enterprises, especially in the drugs’ marketing channels planning and distribution system. I am familiar with the rules of capital market, and have participated and led enterprises to be listed in domestic GEM.

When serving as domestic sales director in Shenwei Pharmaceutical Co., Ltd. (listing code HK2877), I was responsible for domestic sales budget preparation, process management and marketing team establishing. During the period of serving as the business director of Buchang Pharmaceutical Group, I was responsible for the Group’s marketing and business strategic planning, business management, business strategy development, operation so group-owned commercial companies, mergers and acquisitions of commercial companies, sales team management and evaluation, according to development strategies established by board of directors. While serving as assistant chairman of the board in Yangtze River Pharmaceutical Group, I assisted the chairman in the management of marketing according to strategic objectives of the enterprise. I was responsible preparing and implementing the Group's overall marketing strategies. I participated in group investment, mergers and acquisitions, new products development-decision-making and etc. As the general manager of Shanxi Zhendong Pharmaceutical Co., Ltd. (listing code 300158), I was responsible for the management and operation of the Group, and the overall management after the merger and acquisition and the establishment of new drugs research and development platform. During my service, the annual sales increases by 50%. Zhendong becomes the fist listed company on the GEM in
Shanxi Province, and one of the top 100 traditional Chinese medicine enterprises.

In 2012, I was appointed as the executive director of Lanzhou Heshengtang Pharmaceutical Co., Ltd., and presided over the production, marketing and management of it. During my service, the annual output and sales increased by 30%-50% every year. Meanwhile, I attached great importance to team building, and constantly improve the organizational structure, optimize the allocation of human resources, and apply advanced team management concepts to practice. Major breakthroughs were made in expansion of enterprise size, introduction of talents, technological research and development, assets management, and etc.

In addition, in the aspect of projects construction. The Angelica Pain-killer Drop-pills High-tech Industrialization Demonstration Project presided over me personally received special supporting funds from the National Development and Reform Commission; Angelica Production Base Construction Project was the only project in Gansu Province included in projects to be supported in traditional Chinese medicine industry by the Ministry of Industry and Information Technology. As for the research and development of drugs in Gansu Province, I led the development of a national Type I new product, salvia phenolic acid A injection, the development system of which was collaboratively set up by domestic well-known research institutes, institutions of higher education. The project was entitled as the major technological projects of Gansu Province. As for exports, seizing opportunities of “One Belt and One Road” to develop advantages of Gansu medicine. Cross-field cooperation was conducted in various fields to expand the global market. We exported to Hungary and the United States the traditional Chinese medicine formulations and extracts. Xiaochaihu Tang registered in Hungary and officially sold as a drug; the registration and application for approval of Angelica Abdominal Pain-killing Dropping-pills, Jinseng Throat Tablets and around 10 varieties in Hungary were in progress, taking it an opportunity to gradually export to countries in central Asia.

With the significant improve of the comprehensive management level and production efficiency of Lanzhou Heshengtang Pharmaceutical, relevant government authorities gave a high degree of recognition. The enterprise has won or selected as, the Strategic Emerging Industries Key Enterprises in Gansu Province, the Provincial High-tech Enterprise, the Demonstration Enterprise of Drugs Quality and Integrity in Gansu Province, the Circular Economy Demonstration Enterprise in Gansu Province, the Provincial Technological Innovation Demonstration Enterprise, the Provincial Intellectual Property Enterprise, the Provincial Famous Trademark and many other awards. My company’s exclusive products Angelica Abdominal Pain-killing Dropping-pills was selected as the brand product in Gansu Province.

The level of comprehensive management of enterprises is being continuously enhanced with constant learning. I devote myself to the development of enterprises, and committed to development of new drugs, assets management, marketing and distribution, so that social and economic benefits of enterprises can be continuously improved, thus contributing to the development of enterprises and local economy.