

**The Process of Hospital Consolidation:  
A case study in Anhui Province, China**

**DAI Fu**

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

Supervisor:

Prof. Virginia Trigo, Professor Emeritus, ISCTE University Institute of  
Lisbon

Co-supervisor:

Prof. Jiang Hong, Full Professor, Southern Medical University, China

June, 2017



**Instituto Universitário de Lisboa**

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## Declaration

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Date:

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## **Acknowledgements**

Picking up a pen to write acknowledgements means that my doctoral life is nearing its end.

In retrospect, all sorts of feelings are well up in my mind. Having engaged in clinical practice and hospital management for nearly 30 years and completed two master degrees in the time span of ten years, the doctoral life in the past three years has brought more surprises and extraordinary experiences to me.

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## **Abstract**

Hospital consolidation is an important topic both in theoretical research and practical exploration in the healthcare sector as it allows for the improvement of the utilization efficiency of medical resources and for the optimization of cost reduction.

Based on the strategic management theory, especially the resource-based theory, this thesis makes an in-depth analysis of the strategic choices of the First People's Hospital group of Hefei City, Anhui Province, China. Combining with the process of China's health system reform, the motivating factors of establishing hospital groups, the basic concept of hospital groups and modes are reviewed while the reasons and background for public hospitals consolidation in China are introduced. Under this setting, the thesis studies the motivations behind strategic choices and incentives towards consolidation as well as the environment and the strengths and weaknesses of the internal resources of the hospital. Based on the case study method, 25 semi-structured interviews to 25 experts and participants and field visits were conducted for data collection.

The research shows that the consolidation strategy followed by the hospital allows for its sustainable development. However, in identical situations, for positive results to be achieved, a core member of the group should be selected to lead the consolidation process during the transition period and to balance the relationship between centralization and decentralization while respecting each specific situation. The analysis of the strategic consolidation of the hospital studied allowed for the identification of difficulties and challenges, which may serve as a theoretical base for the practice of other organizations undergoing a similar process.

**Key words:** public hospitals, consolidation, case study method, VRIO school

**JEL:** I11, I18, M1, M54

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## Resumo

A consolidação de unidades hospitalares é um tópico de investigação importante para a teoria e para a prática, pois permite reorganizar os recursos médicos através da sua utilização eficiente e da otimização da redução de custos.

Com base na teoria da gestão estratégica e em especial na teoria dos recursos, esta tese analisa em profundidade as escolhas estratégicas com que se debateu um grupo hospitalar da cidade de Hefei, província de Anhui na China: o First People's Hospital Group. Tendo como base o processo de reforma do sistema de saúde na China, a tese estuda as motivações inerentes à tomada de decisão, bem como os incentivos à consolidação. São analisados os pontos fortes e fracos do hospital, os seus recursos principais e a envolvente procurando-se entender as escolhas estratégicas que levaram à consolidação. A tese utiliza o método do estudo de caso tendo sido realizadas 25 entrevistas semiestruturadas a peritos e participantes no processo bem como diversas visitas que permitiram observação direta.

A investigação demonstra que a estratégia de consolidação permite assegurar o desenvolvimento sustentado do hospital mas, para isso, a melhor opção é escolher um dos membros do grupo para assumir um papel de liderança durante o período de transição e cuidar do equilíbrio da relação entre centralização e descentralização sem descurar a especificidade da situação local. A análise da consolidação estratégica do hospital estudado permitiu ainda identificar as dificuldades do processo contribuindo com uma base teórica que poderá ser útil ao desenvolvimento de outras organizações em idêntica situação.

**Palavras chave:** hospitais públicos, consolidação, método do estudo de caso, VRIO, escola dos recursos

**JEL:** I11, I18, M1, M54

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## Chapter 1 - Overview

### 1.1 Research background

In 2000, the eight ministries and departments under the jurisdiction of the State Council of the People's Republic of China (PRC) jointly issued the *Guidance on the Healthcare System Reform in Urban Areas*, encouraging healthcare organizations of all kinds to cooperate and merge into healthcare groups. After its issuance, public hospitals around the country have witnessed an overwhelming wave of consolidation. In 2010, the Ministry of Health, the State Commission Office for Public Sector Reform, the National Development and Reform Commission, the Ministry of Finance, and the Ministry of Human Resources and Social Security of the PRC jointly issued the *Guidance on Pilot Reform of Public Hospitals*. Of the 16 pilot cities for public hospital reform, nearly half have put forward and set up hospital groups, such as Shanghai Ruijin Hospital Group, General Hospital of Ningxia Medical University, the Affiliated Hospital (Group) of Putian University, Nanjing Drum Tower Hospital Group, Qingdao Municipal Hospital (Group), Wuhan Pwai Hospital and Jiangsu Kangfu Health Network. Unlike spontaneously formed alliances, the purpose of hospital groups has shifted from survival to optimization of healthcare resource allocation. The emergence of China's hospital groups indicates that China's medical industry has stepped into the process of marketization and internationalization, which is an inevitable trend of the health care sector (Fan & Yuan, 2007).

Hospital consolidation is an effective way for large hospitals to balance short-term benefits and long-term development, strengthen brand effect and comprehensive service advantages, lower healthcare costs, enhance overall competitiveness, and expand healthcare market. It is also the direction that hospital administrators in China need to explore in the future (Hao et al., 2005). The

consolidation of public hospitals is a strategic behavior proactively enacted by public hospitals as a result of external forces and internal motivation in order to cope with a changing environment (Yan, 2005). Specifically, building a moderately prosperous society in all aspects, building a harmonious society, guaranteeing the smooth progress of the medical system reform under the influence of population aging and fierce competition in the medical market, especially the impact of foreign medical institutions on the domestic medical market after China's accession to the WTO are the external factors that lead to public hospitals' consolidation (Zhang, 2013). Internal factors include realizing the effective allocation of medical resources, improving hospitals' economic efficiency, complementing each other's advantages, strengthening coordination and exploiting synergies, technological innovation, characteristics of medical industry and geographic environment (Shao et al., 2003).

However, it should be admitted that there is still not a set of mature practices and theories to guide China's hospital consolidation and many problems remain to be solved. First, the government has unduly intervened in hospital consolidation since currently; most of the hospital consolidation is led by the government, which can establish a large-scale hospital group in a relatively short time (Hao et al, 1998). However, the establishment of a hospital group in this manner is primarily politically-driven, and therefore the advantages of hospital group cannot be brought into full play and the initiatives of group members cannot be highly mobilized. Second, the ownership of property rights is not clear; since the hospital group is a new entity, there are still no established rules to clearly define the ownership of property rights, legal status and legal relationships among group members. The hospital is not the owner of property rights, and thus the transfer and purchase of assets must be approved by the government (Li, 2006). Third, there are diseconomies of scale as most hospital groups are established through immoderately increasing their size. The purpose is to gain the economies of scale, but it is difficult to reach them by simply expanding the size without considering quality, and this move may result in the

increase of medical costs and diminishing returns (Li et al., 2003). Fourth, there is a poor management system since after a hospital group is established most members are still operating according to their previous systems generating many problems such as complicated and tangling organizational structure, overlapping functions, unclear management responsibilities and sparsely spread financial resources. The weak basic-level management inside the group will lead to the slow transfer of information among group members. Furthermore, the scattered financial resources will also result in unreasonable allocation of funds, inefficient use, imperfect financial supervision system, all of which makes it difficult to establish a unified financial policy (Xiong & Li, 2012). Fifth cultural conflicts abound as values, behavioral norms, hospital culture, management system and hospital brand of the group members may clash with each other, resulting in a loose organization structure, poor cohesion and ultimately the hospital group may end up in failure. All these problems may become obstacles hindering the sustainable development of a hospital group.

Meanwhile, hospital consolidation is faced with tremendous social changes today. Such changes are not only present in the internal environment of the healthcare industry, but also emerging from China's social transformation and the international situation. For instance, the aging society will lead to an increase in healthcare costs; the reform of the medical insurance system, information technology and smart healthcare will alter the healthcare services model and the way medical personnel work, acting as a driving force for the revolution in healthcare service quality. Therefore hospital groups will face more problems in benefits (both social and economic) and efficiency in the face of new insurance policy and utilization of new means of medical services.

By far, there are still nor a systematic theory system neither a mature management model in relation to China's hospital consolidation. Even worse, case studies on the consolidation strategy and empirical research on the feasibility of China's hospital consolidation are rarely found (Yan, 2005). Therefore, efforts should

be made first to address some theoretical and practical issues, such as the definition of hospital group and group companies, the necessity of establishing hospital groups, how hospital groups should be organized, how to rationalize the mutual ties between hospital members in a hospital group and how to operate it. Under these circumstances, it is of great theoretic and practical significance to research the influencing factors and development model of public hospital consolidation.

## **1.2 Current Status and Progress of Research on Hospital Strategy Management**

The research on hospital strategic management by foreign scholars started relatively early. According to Miles et al. (1978), hospital business types can be classified into defenders, prospectors, analyzers and reactors from the perspectives of hospital internal management and external relations. From the angles of internal environment and external environment, Rubino and Wei, (2001) classified the current American hospital management strategies into competitiveness strategy, market supply and demand strategy, product strategy, operation strategy and organizational structure strategy. According to Ge (2012), by implementing independent strategic plans in the outpatient departments of nine affiliated hospitals, the University of Michigan has not only successfully increased the proportion of outpatient income in relation to the total income in each affiliated hospital, but also improved patient satisfaction with outpatient services (Wu, 2014).

In a long-term research by Doctor Mark Graban on the Toyota production system, he has explored the feasibility of application of lean management system to the health sector (Grabán & Zhang, 2014). Currently, strategic management has become a compulsory course in most foreign universities; executives in non-profit organizations come to realize the importance of strategic management; a great number of hospitals have introduced the concept of strategic management; and many business-oriented management theories have been applied to the hospital management. Lu and Xu



(1999) gave a brief overview on the application of strategic management in American hospitals and described how strategic management had been widely and effectively used by non-profit organizations like the Red Cross, universities and hospitals along the 1990s.

After a review on the speeches delivered in the fifth annual conference of Chinese hospital presidents, Li (2009a) summed up the hospital governance structure reform models adopted by foreign public hospitals in the 1980s and classified them into four types, namely (i) the HK's hospital authority model, (ii) the Australia's hospital group model, (iii) the Britain's large health framework management model and (iv) the model of public hospitals operating as legal persons. Li (2009b) summed up the public hospital governance structure reform models in the countries across the world in 1980s, which include the hospital authority model in Hong Kong, Australia's hospital group model, UK's big health management model and incorporated public hospital model. Lan et al. (2011) asserted that government should adjust its administrative functions in line with the progress of public hospitals' reform and meanwhile assume the primary responsibility of funding for public hospitals. In China, the hospital group model has become the direction for public hospitals reform.

Currently, the research of hospital strategic management theory in China is basically consistent with the development of international research and meanwhile a standardized research technical route has been primarily developed. Because the hospital development strategy relates to the change of hospital business direction and scope, it has the characteristics of globality, futuristic implication, systematicity, competitiveness and relative stability (Zhou & Huang, 2002). From the perspective of hospital strategic alliance, Yang et al. (2009) analyzed the present situation and put forward some countermeasures and suggestions from three aspects: the change of perception, the cooperation between hospitals and the guiding role of the government. Li and Wu (2010) briefly discussed how large public hospitals should make sustainable development strategy in the process of the new medical system reform. Yu

et al. (2010) analyzed the strategic management model of public hospitals in the context of new medical system reform. Wang et al. (2010) also proposed several public hospital strategic management models, including brand marketing model, differentiated business model, cost control competition model, resource reorganization operation model and diversification development model. Against the backdrop of the new health system reform, Yu et al. (2010) discussed the characteristics of strategic management in public hospitals, principles of formulating strategies and basic methods of strategic management. Through analyzing the influences of the external environment, member characteristics and mutual relationship of hospital strategic alliances on the performance of the strategic alliances, Wan et al. (2012) established a relatively complete theoretical evaluation model, and then put forward some suggestions. Xu (2012) proposed three kinds of public hospital development strategies, including service-oriented strategy, brand strategy, and special products and services strategy. Wan et al. (2013), based on the reform and results of hospital consolidation, analyzed the main problems and causes in the process of hospital consolidation and offered specific solutions. In his book *Overview of Hospital Strategic Management*, Yi (2014) expounded the background and theoretical origin of hospital strategic management, discussed and analyzed how to effectively implement strategic management in hospitals, and put forward creative management methods and practical guidance from such perspectives as healthcare, medical service, operation and management.

Taken together, the research of Chinese scholars mainly focuses on fields such as the changing external environment and policies, competitiveness and adaptation strategy, market supply and demand strategy, product supply strategy, business and management strategy, as well as organization structure. Considering that hospitals should provide all-round, continuous, coordinated, accessible, comprehensive and personalized services.

The development of hospital strategic management theories in China is mostly based on the well-formulated foreign theories, for example, using the foreign classical model of strategic management to analyze a hospital's internal and external environment. The suggestions for hospital strategic management are mostly based on theories instead of practice. Therefore, there are few empirical studies on this subject. Currently, there is still no suitable medical service model for Chinese hospitals to draw lessons from, and the research of hospital development strategies mainly focuses on improvement of service level, training of medical staff, introduction of advanced technologies and creation of a famous brand. Through analyzing the influencing factors of hospital consolidation, a hospital group management strategy based on the resource-based theory is proposed.

### **1.3 Research Significance: Theoretical Significance**

Under the background of the reform of public hospitals, this study focuses on reviewing the development of hospital consolidation considering the reform direction and its operation mechanisms and further discusses the influencing factors. The theoretical significance mainly includes:

(1) The study of hospital groups can theoretically and empirically demonstrate that hospital consolidation can promote the rational allocation of limited medical resources and ensure the public to enjoy safe, effective, convenient and cheap medical services, thus relieving the problem of “difficult and costly access to health care services”.

(2) To improve the efficiency of hospitals, reduce management costs, expand the market competitiveness of hospitals and promote their further development through consolidation. In the future, public hospitals will focus on connotation construction, thus fully assuming their social responsibility. The public hospital development model should also transition from an extensive operation model featuring high-input, high-consumption and high medical fees to intensive hospital group model

characterized by low cost, low consumption and high efficiency.

(3) As the medical reform goes on, the difficulty of reform and the costs that come with it will gradually increase, meaning that higher prices will be paid for any poor decision. Therefore, it is necessary for public hospitals to proceed with their social perspective, properly grasp their established mission and objectives, discover potential problems and analyze causes, take advantage of resource advantages, and develop specific strategies and measures in order to find a suitable development strategy including renewing medical philosophy, innovating hospital institutions, restructuring organization structure, reconstructing human resources, reasonably allocating medical resources, optimizing management system, improving business efficiency, creating hospital culture and actively promoting medical services. With China's medical market opening wider to the outside, a bigger impact will be felt by the hospitals. It is therefore necessary to study the medical market, pinpoint their position in the medical market and formulate a development strategy so that they can always maintain a strong competitive edge in the fierce competition.

(4) Speed up the expansion and development of hospitals. With larger hospitals stepping up efforts to expand their scale, the strategic plan begins to play an increasingly important role. When the competition in the medical market becomes increasingly fiercer, any hospital will have a strong desire to pursue constant changes and make breakthroughs, but they will find there are some uncontrollable factors affecting the implementation of their strategic plan. While the policies of the medical system reform in China are still unclear, hospitals must formulate a strategic plan that is highly adaptive to the changing policies.

## **1.4 Research Methods**

With a hospital group as the research object, the case study method, literature review, field visits, expert interviews, longitudinal analysis and statistical methods are used in combination to examine the current status quo of operation and management

of the First People's Hospital Group of Hefei City and solutions and suggestions to the existing problems are proposed. This thesis analyzes the consolidation mode of the First People's Hospital of Hefei City and its implementation, puts forward the existing problems, suggests solutions and aims at providing practical experience and useful references to draw a conclusion. Meanwhile, it also introduces the consolidation experience of foreign hospital groups. The specific research methods will be presented in detail in the Chapter 3.

## **1.5 Research Problem, Research Content and Research Framework**

### **1.5.1 Research Problem**

As described above, hospital consolidation in China felt its way forward in pitch darkness, bumping into difficulties both internally and externally along the way and there were no well-developed precedents to learn from. In response to such needs, this study selects the First People's Hospital Group of Hefei City, Anhui Province, which is one of the earliest and most enduring public hospital groups in China, and uses it as a case to conduct in-depth analysis on the motivation behind its establishment and what results it has achieved. So far, the development of hospital groups in the PRC has followed no unified model, which leaves tremendous room for exploration. The First People's Hospital Group of Hefei City, Anhui Province has grown with the healthcare reform in China and inevitably has faced difficulties and problems. What have been the influencing factors of these problems? How did the case hospital take advantage of its own resources to effectively address them? Are policies and support from government needed? What light will be shed from this case on the development of public hospital groups in China?

The First People's Hospital Group of Hefei City has evolved from looseness to tightness, then to reform and innovation and its advantages are starting to manifest. Although the Hospital Group studied here is a relatively successful case, its

development, to a certain extent, reflects the tortuous path that Chinese public hospital groups have taken. This study will make an in-depth analysis of the First People's Hospital Group of Hefei City, including its growth process, strategic choices at the early stages, difficulties and problems, and resource advantages in the face of internal and external challenges, with a view to shedding light on the development of hospital groups.

### **1.5.2 Research Content and Research Framework**

With the help of the strategic management theory and specifically the resource-based approach, this study makes an in-depth analysis of the strategic choices made by the First People's Hospital Group of Hefei City to know its advantages in resources, analyze challenges in its development, seek solutions, and share its experience, thus shedding light on the reform and innovation of hospital consolidation in China. This study will progress in the following order:

Chapter 1 describes the process and challenges of hospital consolidation before putting forward the research problem, purpose and contents, and building the research framework.

Chapter 2 provides the background for this study. This part first sets forth the definition of hospital group and the five operating models, followed by the development and achievements of hospital consolidation in other countries across the world. It subsequently introduces the public hospital reform in China, including the status quo of Chinese public hospitals, hospital grades, evaluation criteria, the process of public hospital reform in China and the results it has achieved thus far before concluding with the development of public hospital consolidation in China. Through the analysis of public hospitals, the distribution of medical resources and the process of healthcare reform in China, this part explains the reasons behind the decision to implement hospital consolidation while pinpointing the types of existing public hospital groups in China.

Chapter 3 introduces the research methods, especially the case study methods, data collection and data analysis methods.

Chapter 4 mainly reviews the strategic management theory and specifically the resource-based theory to provide the theoretical support for this study.

Chapter 5 describes the development of the First People's Hospital of Hefei City and the First People's Hospital Group of Hefei City – the case used in this research, a nearly ten-year growth from infancy to maturity, from looseness to tightness. Given the social environment, market and its advantageous resources back then, this chapter also analyzes its strategic choices to pursue hospital consolidation. Meanwhile, the factors potentially influencing the development of the First People's Hospital Group of Hefei City are analyzed through conducting semi-structured interviews with 25 experts and field visits.

Chapter 6 discusses the factors leading to the development of the First People's Hospital Group of Hefei City over the past decade and the achievements it has made so far including the challenges and influencing factors from inside and outside the group before putting forward suggestions to address existing problems with the help of the resource-based theory.

Chapter 7 concludes the study with suggestions for the future development of public hospital consolidation in China and points out limitations to the study and suggestions for future research.

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## **Chapter 2 - Literature Review and Institutional Background of the Consolidation of Chinese Public Hospitals**

This chapter falls into five parts: (1) introduction of hospital groups, including the definition and types of hospital groups; (2) description of the formation of hospital groups in Great Britain and America, their present situation and the results achieved; (3) introduction of the five types of operation models of hospital groups; (4) analyzes of the motivating factors that promote hospital consolidation; (5) discussion on the development background of public hospitals consolidation. Through the analysis of public hospitals in the PRC, the distribution of medical resources and the process of China's medical system reform, this part explains the reasons behind the decision to pursue hospital consolidation while pinpointing the types of existing public hospital groups in China.

### **2.1 Definition and types of hospital group**

#### **2.1.1 Definition of Hospital Groups**

In China, "hospital group" generally refers to a medical consortium that consists of multiple hospitals assembled in various forms, also known as *Medical Group*, *Hospital Conglomeration* or *Restructured Hospital*. Now there is still no unified definition of a hospital group.

The hospital group is variously defined by Chinese scholars and listed as follows:

(1) According to Hao (2004), hospital group refers to a unified management entity formed by three or more hospitals for a specific purpose.

(2) Chen (2001) defines hospital group or multihospital system as a group

organization formed by three or more hospitals with independent legal status achieved through negotiation. The group members are affiliated to the headquarters hospital and the hospital group operates in a chain mode.

(3) Shao et al. (2003) define hospital group as an organic hospital consortium assembled by some relatively independent hospitals according to specific rules and mechanism.

(4) According to Lin et al. (2010), hospital group mainly refers to an integrated and multi-layered medical services group formed by a large three-grade general hospital and some subordinate hospitals such as community health centers, township hospitals, specialty hospitals and chronic disease hospitals through M&A or technology and asset ties.

(5) Zou et al. (2010) defines hospital group as a sizeable medical corporate consortium assembled by some medical organizations. The member hospitals, which are loosely or tightly connected to the headquarters hospital, have linked up assets and abide by the common behavioral norms prescribed in the group regulations.

In summary, a hospital group is a unified management body of three or more hospitals organized for a specific purpose (Hao et al., 2005). It aims to provide the hospitals in the group with sound technology, personnel, management and service advantages and to place social foundations at the center, welcoming joint participation from hospitals or investment and management institutions with legal persons. In the form of asset restructuring, mergers and acquisitions, cooperation, joint ventures, a hospital group intends to build itself into a body of healthcare organization with high technology, sound management, complete functions, sound services and scale profits following a series of key measures, including the immersion of medical technologies, promotion of management culture and reform of institutional mechanisms (Hao et al., 2005).

## **2.1.2 Types of hospital group**

### **2.1.2.1 Classification according to grouping methods**

A hospital group can be formed in a horizontal or vertical way (Shao et al., 2003) as follows.

#### **(1) Horizontal hospital group**

Horizontal hospital group is formed by hospitals with same or different grade and scale in different regions, and bears three characteristics:

(a) Although the group members are under the unified management of the headquarter hospital, they can still compete with each other. According to principles of economics, under perfect competitive condition, all hospitals providing the same medical services are price takers and they fight hard with each other to secure bigger market share with large-scale hospitals occupying a dominant place. When a hospital becomes large enough to monopolize the market, it will be no more a price taker but a price influencer. Within the horizontal hospital group, there is a headquarters hospital that holds shares of other subordinate group members and is responsible for the management of the whole group. By forming a close and stable partnership, the hospital group can give full play to the group advantage, formulate unified business strategies and align the interests of individual members with the whole group.

(b) Under the leadership and unified organization of the headquarters hospital, the group members can still compete with each other.

(c) The cross shareholding between group members can make the hospital group more stable. In order to make the unified management more effective, the hospital group can encourage the group members to hold shares of each other, which can not only help establish a clear hierarchical level, but ensure the smooth operation of the hospital group.

#### **(2) Vertical hospital group**

The vertical hospital group is formed by a core hospital and other hospitals with

different equity, grade and scale, and the following three characteristics:

(a) With the brand, technology and reputation of the core hospital as the core competitiveness of the group, the core hospital is the organizer and leader and establishes long-term and stable cooperation with group members.

(b) The group members are highly correlated in technology and relationship-specific investment. The core hospital outputs technology, capital and brand to group members so that they can enhance their capability and gain larger market share. In turn, the group members can help promote the reputation of hospital group and make it bigger and stronger.

(c) The group members are closely linked and highly dependent on each other. While trying to maintain the survival and development of their own hospitals, the group members must make efforts to make the hospital group bigger and stronger, continually increasing its profits. However, the strong dependence of group members on the hospital group also increases its operating risks (Shao et al., 2003). Each consolidation type has its own characteristics, as demonstrated in Table 2-1.

Table 2-1 Characteristics of foreign hospital groups assembled in various forms

	Horizontal type	Vertical type
Period	1980s	Post 1990s
Group members	Medical organizations with same function and scale	Medical organizations with different functions and scale
Purpose	Increase market share and improve resource efficiency	Resource sharing and cost saving
Type	Parallel alliance between hospitals at the same level	Complementary alliance between hospitals providing different medical services
Advantages	<ul style="list-style-type: none"> <li>● Alliance between strong hospitals in order to enhance competitiveness</li> <li>● Resource complementarity, save equipments and human resources</li> </ul>	<ul style="list-style-type: none"> <li>● Effectively improve allocation and efficiency of medical resources; provide complementary medical services at different levels</li> <li>● Healthy flow of talents among hospital groups</li> <li>● Small and medium-sized hospitals can get full support from large hospital in talents, technologies and resources</li> </ul>
Defects	<ul style="list-style-type: none"> <li>● Regional monopoly</li> <li>● Negative effect of competition between group members on alliance</li> </ul>	Segmented system leads to poor management

Source: Yu et al. (2012)

### 2.1.2.2 Classification according to management form

The consolidation of hospitals has facilitated the reorganization and integration of medical resources, the enhancement of the efficiency of resource allocation, and the improvement operation and management capacity of hospitals. The public hospital groups can be divided into the following three types according to its management form.

### **(1) Closely-knit Hospital Groups**

For this type of hospital groups, management tools are used to put its members under a centralized management and the staff, capital and materials are allocated in a unified manner. The members of the group share a unified management mode and organizational culture so as to realize their management goals. With assets, technology, management mode and contracts as the links among member hospitals, the hospital group exercises a centralized power on the personnel affairs, financial affairs, management and distribution. Presently, this type of hospital group is still rare in China (Meng, 2011).

The advantages of this type of hospital group are as follows: first, it can help to achieve integrated management by integrating medical resources, cutting down the operating costs and reducing the waste of manpower, materials and resources; second, it can help to achieve the scale management, enabling the hospital group to have advantages of scale and strong abilities to avoid risks in an increasingly competitive medical market; third, it can expand the brand effect and provide a wider range of medical services so as to occupy a broader range of the medical market; fourth, it has an independent legal person status, which can avoid conflicts between multiple legal persons and reduce the complicated procedures in the development of hospital groups; fifth, member hospitals within the group can complement each other and form distinctive new brands (Ji, 2000; Sun, 2007).

### **(2) Loosely-knit Hospital Groups**

The loosely-knit hospital groups usually take the form of medical consortia. The member hospitals, which are loosely connected, operate independently and their assets are also relatively independent. This type of hospital group always operates in two alternative ways: one way is that the group's core hospital exports its own brand, managerial expertise, technology, management personnel and technical personnel to the member hospitals and charges them management fees; another way is that all member hospitals use group purchasing to procure logistic materials, medical supplies

and medicines to reduce purchasing costs. The hospital group uses its own brand advantage to occupy the medical market in a bid to expand its brand effect (Liu, 2006).

Hospital groups in this form are currently the majority in the Chinese medical market. However, as for their development prospects, some groups may disintegrate due to conflicts in coordination, management and distribution of interests. With the further deepening of the property rights system reform of Chinese hospitals and the increasing improvement of corporate governance structure, some hospital groups will form closer inter-dependent relations, and ultimately there may be a new form of corporate governance structure to replace the loose form of the hospital group (Hao, 2004; Sun, 2007).

### **(3) Mixed-type Hospital Groups**

It refers to a diversified hospital group formed by hospitals and market players in other industries. The mixed-type hospital group offers not only medical products but also other products related to medical products. With medical services as its core business, it also makes efforts to diversify its products and constantly broaden the scope of existing products. This type of hospital group is not yet common in China, but it has a very promising prospect (Xu & Li, 2003; Liu, 2006).

The current public hospital groups in China typically exist in one of the first two forms. After years of market test, the advantages and disadvantages of these forms have gradually revealed and those hospital groups also show different prospects, which can provide a good reference for the development of some hospital groups in the future. Table 2.2 below summarizes these characteristics.

Table 2-2 Comparison of Different Kinds of China's Public Hospital

Groups Type	Main contents	Market share	Development prospect
Closely-knit hospital group	With assets, technology, management mode and contracts as the links between member hospitals, the group exercises a centralized power on the personnel affairs, financial affairs, management and distribution.	Still rare	Show a promising prospect
Loosely-knit hospital group	Member hospitals are loosely connected and operate independently. The hospital group uses its own brand advantage to occupy the medical market.	Majority	Disintegrate or form closer inter-dependent relations
Mixed-type hospital group	It is a diversified hospital group formed by hospitals and market players in other industries.	Still rare	Can be used for reference

Source: the author.

## 2.2 International background of the hospital consolidation in British and America

With the rising tide of mergers in the 1990s, either in America where medical organizations are market-oriented or in Britain where medical organizations are largely controlled by macro policies, or even in some Asian countries, many medical organizations have actively joined or been passively pulled into the waves of merger, acquisition and restructuring.

According to the role of government and individuals in the healthcare system, foreign hospital groups are divided into the following types: market-oriented, government-controlled and public-private partnerships (Zhang & Huang, 2005). The



market-oriented hospital groups, represented by America, are established as a result of fierce competition among hospitals during the commercialization of healthcare services. The hospital groups, represented by the UK, are mainly controlled by the government, but have independent legal person status. Singapore is an Asia country whose culture is similar to the China and the formation of joint public-private hospital groups in this city-state is driven by the government. Each hospital group model has its own characteristics and will be analyzed below.

### **2.2.1 Market-oriented hospital groups in America**

In some developed countries, including the US and Singapore, healthcare industry is already an important part of the national economy. The embryo of hospital groups is nothing new in the United States. In 1956, the number of bed-ridden patients in Catholic hospital groups accounted for 25% of the national total. However, it was not until 20 years later that hospital groups have truly become the development trend of the industry. Driven by government, associations, capital and internal factors, hospitals in the United States ventured down the road of consolidation, which is not uncommon in regional development (Dai et al., 2009; Guo, 2003).

Hospital consolidation has obvious advantages like economies of scale, sharing of resources, information and professional management experts, powerful marketing strategies and easier access to the capital market. Therefore a surging trend of M&A, trusteeship and chain operation appeared at that time. According to the American Hospital Association (AHA), there were 134 successful merger cases between 1962 and 1970 in America. After 1970, the scale and number of mergers has substantially increased. America has currently more than 6,300 hospitals, forming nearly 500 hospital groups. In 1995 alone, there were 20 percent of American hospitals being merged or sold (Shao et al., 2003).

The Columbia Healthcare Group is the largest hospital group in America with 340 hospitals in 38 states of America. It has 135 surgical rooms, 200 home health

agencies and 7% beds of the total in America. Even some hospitals respectively affiliated to the Hospital Corporation of America, Healthcare Trust and Humana Hospital Group are also its group members (Beaver et al., 1998). The Wisconsin Hospital Group is one of the three largest hospital groups in America with 12 hospital members. It has established cooperation with around 3,000 physicians in 25 regions, providing places and medical equipments for them to practice medicine (Patashnik & Zelizer, 2004). Factors such as intensifying competition, increasing operating costs as well as blurred boundaries between medical behaviors and business activities have helped spawn various types of physician associations (Snoe, 1998). Among the integrated organizations of medical services, the alliance organizations formed by physicians and hospitals include: Physician hospital organization (PHO), Integrated delivery system (IDS), management service organization (MSO) and health maintenance organization (HMO). In the new situation, it is necessary to combine the two strategies of competition and cooperation, in order to maintain a lasting and comprehensive competitive advantage (Ranjani, 2001).

After years of development, hospital groups in the United States have witnessed a standardization of operations with ownership and operation rights standing separate. Therefore, the national merger and integration of hospital resources since the 1950s has entered a relatively stable period. Consolidation has now become the mainstream (Gu & Pan, 2012).

The Hospital Corporation of America (HCA) is the world's largest private healthcare operator. In the mid-1960s, Park View Hospital (the predecessor of HCA) decided to expand business interests through mergers, in a bid to raise funds to propel technological progress and seize market share. It endeavors to build a large-scale economic entity, and improve the quality of community healthcare across the United States. HCA strategically invested most resources into the core hospitals with higher profitability during its development. It shifted the development direction from extensive external expansion to compact internal consolidation, with key emphasis on

operational efficiency and profitability (Dai et al., 2009).

The massive healthcare market and fairly sound hospital system in the United States have given birth to a considerable number of large hospital groups. In 2002, three American hospital groups (HCA, Tenet and Triad) made it onto the Forbes 500 list, a landmark event indeed. It also shows that US healthcare service groups have achieved fair success in business operations (Lan et al., 2011).

Hospital groups in the United States are organized in varied forms and the most common four types include: (1) Hospital consortium. The group members are still independent market players and the management department is only responsible for the centralized purchase of drugs and medical equipments and coordinating the sharing of medical apparatus among group members. (2) Joint board of directors. The board of directors is established, with members consisting of the representatives sent by each group member. The executives of the group are appointed by the board and the hospital group can be organized through merger or coalition. (3) Quasi-corporation model. The group's daily affairs are dealt with by executives and board of directors; the group members have their own boards and remain financially independent. (4) Corporate structure. The hospital group, which is established through merger, acquisition or coalition, operates like a company. The group organized in this way can, to some extent, improve the operating efficiency and increase market share (Shao et al., 2010).

### **2.2.2 Government-controlled hospital groups in the UK**

In early 1990s, because of inadequate financial resources and low efficiencies of hospitals, the government began to reform public hospitals and transformed them into Hospital Trusts with independent legal status. The devolution of power to hospitals has increased their efficiency while the government still has control over the health care system. The UK has carried out a reform in which public hospitals are neither managed independently nor as a company. Previously independent hospitals have

been incorporated into hospital groups with independent legal person qualifications, a move that has not only enhanced efficiency, but ensured the country's control of the medical service system.

The UK government provides most free medical services to all its citizens, but this commonweal nature does not affect the profitability of hospital groups. From 1992 to 2000, the average rate of net profit registered 11.6% (*Internet Training Materials of Chinese Health Economics*, 2010).

In mid-1990s, in order to promote competition among hospitals, improve their profits and operating efficiency, the NHS, UK's administrative department of healthcare, delegated the power to the hospitals so that they can operate independently. Along with the strengthening of hospitals, the large-scale hospital trust appeared (Chen et al., 2002). In medical consortium or hospital trust, the hospital has independent legal status and the board of directors is the top executive organ. The government sends representatives to the board to ensure the decisions of the hospital trust are made under the guiding principles of the government. The diversified operating models like direct shareholding or forming alliances within the hospital group are adopted. This model has separated the dual roles of UK government as medical provider and buyer. With moderate competition between government and hospitals, the medical market is developing in an orderly way. The government is no longer a provider of medical services but a buyer of a number of quality medical services from hospital trusts (Wang et al., 2005).

### **2.2.3 Hospital groups based on public-private partnership in Singapore**

Singapore has established a market economy system under macro-control and the public hospitals and private ones coexist. Before 1984, the government hospitals in Singapore adopted the UK's healthcare model. In 1985, Singapore carried out healthcare reform and transformed the government hospitals and charity hospitals into two hospital groups based on the idea of "introduce competition in order to prevent

monopoly”. The two hospital groups, namely, National Health care Group (NHG) and Singapore Health Services (SHS), are fully owned by the government. They operate in a market-oriented way and enjoy independent management rights (Chang, 2007). Given that the Singapore is a small country, the two hospital groups are established according to their geographic location, with Singapore Health Services (SHS) in the east and the National Health care Group (NHG) in the west.

The SHS includes four public and specialty hospitals and seven clinics. The NHG consists of four public hospitals, two specialty hospitals and nine clinics; meanwhile, it also established an international medical center in partnership with Johns Hopkins Hospital (Zhan, 2013). One objective of the hospital reform in Singapore is to promote “competition”. The establishment of two hospital groups has successfully introduced competition and prevented monopoly thus bringing great vitality to the hospital groups. The government encourages and protects competition, treats the profit hospitals and non-profit hospitals equally in policies and gives the patients full rights to choose what they like (Yu et al., 2012).

## **2.3 Operating Model of Hospital Consolidation**

After reviewing studies on hospital consolidation in the United States, Singapore, Great Britain and China, there are roughly five operating models.

### **2.3.1 Direct Operation and Management**

In this model, the fundamental and core part of the hospital group, like its headquarters, usually makes direct investment to establish new hospitals and purchase or acquire other hospitals. These member hospitals are put under direct control of the headquarters hospital and the scale of the hospital group will be gradually expanded (Lan et al., 2011).

### **2.3.2 Contract-based Operation and Management**

An operation and management contract will be signed where the hospital management company will be commissioned by the property owner to run the hospital. The key management personnel of all departments, including the hospital's president, will be appointed by the management company to carry out the daily management, collect the management fees, and bear the risks of operation loss specified in the contract. During the contract period, the group members are entitled to use the name and logo of the group, join the group's marketing network, and ensure that the corresponding standards of medical technical services are implemented (Lan et al, 2011).

### **2.3.3 Lease-based Operation and Management**

The hospital group signs a long-term lease, renting hospitals from owners. As the legal person, the hospital group will exert direct operation. The lease contract specifies the scope of responsibilities of both sides. The operating profits of the hospitals belong to the hospital group, which is responsible for paying the minimal rent agreed in the contract, plus a certain percentage of annual revenue to the leaseholder on an annual basis (Meng, 2011).

### **2.3.4 Joint Operation**

Independently run hospitals voluntarily unite to form a jointly run hospital group that will bear a unified logo, implement unified marketing strategies and uphold unified quality standards to compete with large hospital groups. The main purpose of the hospital group is to create the overall image, enhance marketing efforts and facilitate patients' transfer. The group members are financially independent from each other and the costs of joint actions are jointly undertaken by the members of the hospital group (Sun, 2003).

### **2.3.5 Franchised Operation**

The hospital group outwardly transfers its franchise rights. The transferee maintains independence in finance and property ownership, and is immune from the group's control. However, it shall pay royalties to the group. The group allows the transferee to use the group name, logo and management model, and join the group's sales and marketing network. Thus the transferee becomes a member of the group (Lan et al., 2011).

## **2.4 Analysis of motivating factors of hospital consolidation**

Many foreign scholars have studied the motivating factors of hospital consolidation, which are summarized as below:

(1) Yield economies of both scale and scope (Dranove & Shanley, 1995). The economies of scale and economies of scope are the cost advantages that hospitals obtain due to size, output, or scale of operation, with cost per unit of output generally decreasing with the increasing scale as fixed costs are spread out over more units of output. The economies of scale can generally be achieved through two ways: merger or internal expansion. Finkler (1981) and Dranove et al. (1992) argued that the hospital can realize the economies of scale when it has provided the high-technology services, such as open heart surgery and imaging diagnosis. Such medical services need expensive medical equipments and instruments. With the increase of output, the average cost will be reduced.

(2) Gain synergistic effects (Huckman & Pisano, 2006). According to the Efficiency Theory, the merger of two enterprises can produce synergies (Morck et al., 1988). The synergistic effects can be achieved when: the economies of scale and scope lead to the reduction of operating costs; the hospitals use more effective medical technologies and provide more efficient medical services; many hospitals form alliances in management and scientific research; the hospital gains bigger

market share (Jensen & Ruback, 1983).

(3) The group members can get benefits from the market (Dranove et al., 1996). The patient and insurance company generally like the “One stop purchase” service mode, which can reduce the transaction costs of the buyers; for hospital groups, the “One-stop service” can provide stable medical service and reduce the uncertainty caused by change of medical quality, the accessibility to the hospitals and experts in other places, availability of medical technology and referral model.

(4) Reduce management costs and transaction costs. The cooperation between hospitals based on contracts will generate transaction costs, including costs of looking for partners, negotiation, signing contracts and settling disputes. If the hospital frequently changes partners, the transaction costs will substantially increase. Especially when the transaction involves the specific asset investment, the market transaction costs will be even higher. Through establishing hospital group, the management costs and transaction costs can be dramatically reduced. Meanwhile, by offering “One-stop service”, the hospital group can provide the patients with products, service quality and prices with constant standard and help them avoid driving all over town to attain related services at different hospitals (Liu, 2009).

Chinese scholars have also analyzed the motivating factors from different angles, which are summarized as below:

Some scholars pointed out that a hospital group is established primarily for expanding scale, gaining bigger market share, introducing medical technologies and attracting medical talents, achieving economies of scale and raising the hospital's reputation (Xu, 2003). The comprehensive service ability and competitiveness of a hospital are reflected in its operating costs, service quality and scope, medical technologies and hospital culture. The regional hospital group has an unparalleled advantage in integrating these resources elements of its group members. The integration based on group strategy can bring great social and economic benefits, and thus is an effective way to achieve fairness and efficiency (Gu & Guo, 2005). The



establishment of group hospital can promote the restructuring of medical resources, forming a medical supply system that aims to gain bigger market share, give full play to the economies of scale and enhance technological innovation and market competitiveness (Zhang, 2000).

According to Hao (2004), the establishment of hospital group can achieve complementary advantages, resource sharing and mutual benefits and strengthen comprehensive competitiveness. Meanwhile, it can also comprehensively increase the influence, market share, comprehensive strength and competitiveness of the group members. Therefore, the potential benefits are very obvious. The hospital group can plan the beds, subject setting and two-way referral of patients in a coordinated way. Meanwhile, it can promote the rational utilization of idle resources and achieve complementary advantages. The comprehensive advantage of hospital group with large scale and all-embracing services will substantially increase the patient's trust, shape highly attractive brand image, attract patients in the region and even patients from across the country and gain bigger market share. The hospital group can give full play to the subject advantage of group members, broaden the subject space for development, make the hospitals more adaptive to the changing external environment and expand the space of survival and development.

The establishment of hospital groups can also promote the internal reforms of group members, in an effort to achieve the sharing of intractable diseases treatment centers, drugs allocation centers, clinical inspection and quality control centers and large-scale instruments and other medical resources, and render support for streamlining of staff in management department and socializing of logistics services at the institutional and mechanism level. If properly guided, the hospital group reform can improve the efficiency of the hospital, solve the problems of social concern and contribute to the coordinated development of healthcare reform, medical insurance reform and drug industry reform.

In a hospital group, the role of the core hospital is not to integrate all group

members into its own organization structure, but to establish a network through which it exercises strong control over other group members. For some important group members, the core hospital will maintain close contact with them through capital, technology and personnel ties. But these group members are still independent legal persons and have their own assets and interests so that they can still be stimulated by fierce market competition and remain flexibility. Therefore, the hospital group can be regarded as an intermediate organization between integrated medical organization and market. On the one hand, it has achieved the economies of scale that are originally enjoyed by integrated organization and spread out the risks over other members; on the other hand, it avoids the excessively high management and coordination costs incurred in integrated organization. Under certain conditions, the hospital group can use market-regulating mechanism as a substitute for hospital's internal coordination. While lowering the administrative costs, it also saves the market costs incurred by pure market mechanisms, thus significantly reducing the overall operating costs of the hybrid organization. When the organization functions and market mechanisms are properly used, it will generate an effect far greater than the simple summation of both (Shao et al., 2003).

## **2.5 Consolidation of China's Public Hospitals**

### **2.5.1 Background**

As stated before, in China, 90% of medical services are offered by public hospitals and, in recent years, although the total investment of governments at all levels in public hospitals has increased, it still falls far behind economic growth as only less than 10% of the average revenue of public hospitals comes from government allocation. Public hospitals are therefore in an embarrassing situation. Since they have to meet the needs of the general public for health services, they have no choice but to enlarge their service areas, expand service volume and reduce operating costs to

compensate losses. At the same time, the government also approves and encourages public hospitals to gradually become market-oriented. It also has become an indisputable fact that investors in the medical market and hospitals have become more diversified. Especially after China's accession to the WTO in 2001, foreign capital gradually penetrates into the Chinese market while investors with abundant capital and advanced management modes come into China. As the general public is offered more choices, competition in the medical market becomes fiercer. The fast development of foreign-invested and private hospitals has further narrowed the living space of public hospitals in China (Li et al., 2004; Li et al., 2005; Zhou et al., 2013).

Currently, the distribution of medical resources in China is severely imbalanced (Lin et al., 2010; Meng, 2011; Chen & Feng, 2014). Distribution of healthcare resources refers to the spatial organization form of healthcare facilities, namely, the combination and distribution layout of healthcare facilities of different levels and types within a particular area. From the perspective of hospital distribution, the phenomena of repeated construction, functional overlapping, little connection among hospitals at different levels and low efficiency are very common in China. Another unfavorable factor is that many China's large-scale hospitals established in the middle of last century are now faced with the problems of lack of medical space, inadequate medical resources and outdated hospital management. When the development of hospitals is greatly hindered and enters the "bottleneck" period, most patients will be affected (Lin et al., 2010; Meng, 2011; Chen & Feng, 2014).

In addition, the change of medical models also makes it necessary to adjust the medical service structure so as to meet social needs. As a result, medical resources must be reorganized in a scientific and appropriate way, and the fragmentation factors such as administrative division and industry division must be broken so as to achieve complementary advantages and resource sharing (Li, 2009a).

## **2.5.2 Process of Consolidation of China's Public Hospitals**

The establishment of hospital groups has experienced the embryonic stage, early stage and development stage.

### **2.5.2.1 Embryonic stage**

In early 1980s when the planned economy was still implemented in China, most hospitals were state-owned or collectively-owned units. At that time, the main problem faced by the medical industry was the contradiction between people's ever-growing needs of medical services and shortage of supply while market competition was still virtually absent. Confronted with the fact that large hospitals are flooded by patients while small hospitals are rarely visited, the large and small hospitals took the first step towards cooperation. The "Medical collaboration consortium" first appeared, followed by medical resources recombination among some hospitals. Thus the problem of "difficult and costly access to health care services" has been slightly relieved (Wen & Tan, 2000). Afterwards, a large number of medical collaboration consortiums have been established across China, marking the entering of hospital consolidation into the stage of rapid growth. According to statistics, 984 medical consortiums in varied forms consisting of around 1600 medical organizations were established (Gu, 1986). However, the establishment of medical consortiums at that time was primarily politically driven. Meanwhile the group members were financially independent and most consortiums appeared united outwardly but divided at heart. Besides, without unified management system, it was difficult to exercise control over its members. Because of these factors, these medical consortiums ultimately failed. It is worth mentioning that the consortium in the embryonic stage is loose alliance (He, 2004; Xing & Zhang, 2012).

### **2.5.2.2 Early stage**

In early 1990s, after summarizing the past experience and lessons, many public

hospitals began to try new types of hospital groups. Different from the medical consortiums in the period of the planned economy, equity was introduced to participate in hospitals' reorganization. It is generally believed that the establishment of Nanjing Drum Tower hospital group in 1996 marked the beginning of hospital consolidation in China. Since then, an increasing number of hospital groups sprung up. Through merging, reorganizing and collaborating with local medium-sized and small hospitals, public hospitals across China had established different types of hospital groups. However, because the ownership structure of the group members remained fundamentally unchanged, the hospital groups in the early stage were still considered as loose alliances. In addition, with China's accession to the WTO, some large hospitals entered into an expansion period, and many people were concerned that foreign and private capital would enter the domestic medical market. Therefore, in order to rapidly improve comprehensive strength, decision-makers of many large public hospitals decided to make alliances to form closely-knit or loose hospital groups. It is commonly believed that Nanjing Gulou Hospital Group founded in 1996 is the first hospital group in China (Sun, 2003; He & Xu, 2004, Xing & Zhang, 2012).

### **2.5.2.3 Development stage**

At the beginning of the 21<sup>st</sup> century, a number of official documents have been issued by the central government to encourage various types of medical organizations to establish various forms of hospital groups through merger or cooperation. In 2000, the State Council of the PRC forwarded the *Guiding Opinions on Urban and Township Medical and Health Care System Reform* issued by eight ministries, which are System Reform Office of the State Council, National Health and Family Planning Commission, National Economy and Commerce Commission, Ministry of Finance, Ministry of Human Resources and Social Security, Ministry of Health, China Food and Drug Administration and State Administration of Traditional Chinese Medicine of the PRC. According to the document, medical organizations were encouraged to cooperate and merge with each other and co-build medical service groups. Since then,

public hospitals across China have swarmed to explore consolidation. In 2005 alone, there appeared the Shanghai Xinhua Hospital Group, Nanjing No.1 People's Hospital Group and Qingdao Municipal Hospital Group. The establishment of hospital groups is considered an effective way to promote China's public hospital reform because of its advantages in promoting the property right system reform of public hospitals, optimizing resource allocation, enhancing brand effect, reducing operating costs and improving competitiveness (Song, 2007; Li & Jiang, 2012).

At present, there is still few research on the construction of China's hospital group management system. However the government has gradually launched pilot programs to explore the management models of hospital group and there are several typical models as follows:

Daqing Petroleum General Hospital Medical Group is a closely-knit hospital group established by Daqing Petroleum Administration Bureau, with a three-level management system. The hospital group includes the third-level Daqing General Hospital as the core, second-level municipal central hospitals and first-level community health centers (affiliated to municipal central hospitals in different districts). The personnel, assets and materials of the group members are put under the unified management of the health management center of the group (Xin, 2009).

Xiamen model is a successful example of medical information sharing across districts in Xiamen city, which can be describes as “networking medical system based on regional collaboration; establishment of personalized digital health information record; enjoy lifelong healthcare service” (Huang et al., 2010). The digital health information includes health records regarding personal physical examination and disease treatment, urban public health records, medical imaging records as well as maternal and child health records.

Since Shanghai proposed the “separation between government administration and business operation” in its “Eleventh Five-Year Plan” for health development, it has established a “corporation management model”. Shanghai Municipal Health

Bureau is responsible for the administrative management of the urban healthcare industry and the Shanghai Hospital Development Center is tasked with the investment, establishment, management and operation of municipal public hospital groups. It is also responsible for supervising the hospitals under its administration. Besides, as the governing body of municipal public medical organizations, it is also responsible for establishing perfect management systems and business mechanisms, effective incentives and constraint mechanisms.

Weifang of Shandong Province has established a management model integrating administration and operation, which removes the administrative ranking. The hospital president is recruited under contract. Suqian of Jiansu Province encourages social capital to sponsor health care undertakings and has established “privatization management model”. Haidian District of Beijing has established “contract-based management model”. These distinctive models have provided references for the researcher to study the management model of Qingdao University hospital group.

## **2.6 Chapter Summary**

The research on Chinese hospital groups is a subject that needs to be further explored. It is also a dynamic subject with the changes in the health policy, health system and medical market. This chapter reviewed the concept and development of hospital groups, the development of Chinese public hospital consolidation, including the definition of hospital groups, their five operation modes and the present situation of some foreign hospital groups. Based on the predicament faced by China’s public hospitals and the distribution of medical resources as well as on the process of China’s medical system reform and consolidation of hospitals in the world, the background, process and types of consolidation of China’s public hospitals have been explained in this chapter. The chapter also serves as the backdrop for the case study part in this thesis.

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## **Chapter 3 - Research Methods**

In this thesis, the methods of literature review, case study and longitudinal analysis are mainly used to offer the consolidation experience of one particular hospital group. By comprehensively using case study method, this thesis analyzes the consolidation mode of the First People's Hospital of Hefei City and its implementation, puts forward existing problems, unveils practical experience and useful references, and draws final conclusions.

### **3.1 Literature Review and Theory Research**

In this study, a large number of literature is reviewed and cited, involving the strategic management theory, resource-based theory, China's healthcare reform, hospital consolidation and development of public hospital groups in China, which are significantly instructive for establishing the concept model and theoretical basis.

### **3.2 Longitudinal analysis**

Longitudinal studies are often used to study the changes or developmental trends of one or more social phenomena through repeated observations of the same variables over long periods of time. Based on the cross-sectional studies in different periods, longitudinal studies compare and identify the changes of the target object, which include trend analysis and same-sample analysis. The trend analysis studies the changes of different samples in different periods while the same-sample analysis observes the change of the same sample in different periods. They use the same method to collect data but deal with different kinds of samples (Zhou, 1997). Considering the scope of the collected materials, objectivity and authenticity, this

study compares the value of the same indicator in different period, for example, the same period in last year or the same period in history.

All the charts and data presented in this study come from internal and external documents and materials with high reliability and validity, including annual reports of the hospital studied, financial reports, development planning, and data published by the health administrative departments. A number of interrelated indicators are compared to measure the scale, level, development speed of the research object in this study and show how well different indicators coordinate with each other and to which extent the consolidation strategy ensures the sustainable development of the hospital.

### **3.3 Case study method**

#### **3.3.1 Overview of case study method**

Case study is an empirical research focusing on current phenomena in real life. Generally, it is preferred in examining contemporary events in a real life context when the relevant behaviors cannot be manipulated, and thus is commonly used under the following conditions: typically to answer the questions like “how” and “why”; when an investigator has little or no possibility to control the research object; and when it is necessary to examine contemporary events in a real life context (Yin, 2009).

According to research purposes, the case study method can be categorized into several types, including explorative case study, descriptive case study, causality case study and explanative case study (Yin, 2009). Specifically, the descriptive case study gives an accurate account of a person, an event or a scenario (for example, teaching case). It is used to summarize and generalize phenomena or research findings and finally draw conclusions; this method is preferred to study the interrelated problems or problems with causal relationships. In evaluative case study, the researcher puts forward the ideas about the studied case. The explorative case study focuses on finding new insights on the research object or attempts to evaluate the phenomenon

from a new perspective (Eisenhardt, 1989).

The case study can include a single case or multiple cases (Meredith, 1998). The single-case study can be used to test or challenge a well-formulated theory, or represent a unique or extreme case. The multiple-case study includes two analysis stages, including within-case analysis and cross-case analysis. The within-case analysis, as the term suggests, focuses on comprehensively analyzing each single case; while the cross-case analysis will process all the analysis results of multiple cases and make the overall study more robust. Some researchers believe that the single case study can guarantee that a study is conducted in a deep-going way and help researchers to fully understand the case background (Sun et al., 2004).

The single case study is generally used in the following five conditions (Yin, 2009): first, to test or challenge a widely-accepted theory; second, to analyze an extreme or unique case; third, to study a representative and typical case; fourth, to study an enlightening case; to conduct a longitudinal study, or specifically, to study the same case in different times and places. It should be stressed that the effectiveness of the case study method relies less on the number of cases rather than on the deepness that is studied. If an in-depth single-case study can help researchers to discover new theories and improve old theories, then there is no need to conduct the multiple-cases study in a not deep-going way (Dyer & Wilkins, 1991). In this thesis, the single case study method is used to thoroughly study the First People's Hospital of Hefei city.

However, it should be noted that high-quality case studies are relatively few. The main reasons for this are because researchers generally do not grasp the standard case study methods. The problems of case studies are summarized as follows: in terms of case study methods, most researchers tend to select single-case study method and therefore it is impossible for them to conduct cross-analysis and comparative analysis and thus their studies are insufficient in breadth and depth; in terms of data collection, they are only satisfied with collecting surface data and public data but fail to make

thorough investigation and therefore cannot understand the motivation and mechanisms behind the cases; in terms of data analysis, their analysis is often based on subjective judgment instead of objective and structural analysis; in terms of research conclusions, they are often drawn based on the analysis of the superficial phenomena of the case or experience-based and isolated ideas and fail to dig deep into internal law thus it is difficult to generate a systematic theory. In terms of report writing, authors often select materials according to subjective needs but fail to comprehensively and objectively describe the facts. Meanwhile, there are no clear distinction and close logical connection between facts and conclusions (Zhang & Holzer, 2002).

The sources of evidence of case study mainly come from documents, archival records, interviews, direct observation, participant observation and physical artifacts (Yin, 2009), among which the interview is the most important method to acquire first-hand data through direct interaction with interviewees. The interview method has the advantages of flexibility and interactivity compared with other research methods like questionnaire survey and second-data analysis. Therefore, it can greatly ensure the authenticity and effectiveness of collected data. The interview is also revelatory. The knowledge acquired in interviews, after being analyzed and summarized, can be made explicit, structured, systemized, and further generates new theory (Wu & Yu, 2004).

In this thesis, the method will be used to make in-depth interviews with employees of the First People's Hospital of Hefei city. Apart from direct contact and communication with the employees concerned, the researcher also pays high attention to the field survey and direct observation. In the study, the researcher often takes the initiative to informally communicate with employees, and sometimes to attend and organize some meetings. The observed data and data obtained by other methods can be compared and mutually verified. The archival records are an important supplement of interviews and observations, which include the organization's internal publications,

annual reports, historical summaries, relevant project documents, internal online information, and the organization's published information, external internet materials, and external media reports (Wu & Yu, 2004).

The essence of a case study is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what results. For this single case study, it will answer the questions of whether the consolidation strategy adopted by the First People's Hospital Group of Hefei City is the best choice to cope with internal and external challenges and why it is the best choice. Meanwhile, it will corroborate some theories and ideas in the strategic management theory and resource-based theory and it may provide experience and valuable references for the consolidation of other Chinese hospitals.

### **3.3.2 Three steps of case study design**

In the most elementary sense, the research design is the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions, which includes: defining the unit(s) of analysis and determining the case to be studied; identifying the study's questions, theories and hypotheses; designing the case study (single case, multiple cases, holistic, embedded); determining the research procedures and ensuring the quality of the case study (Yin, 1985, translated by Zhou, et al., 2015).

#### **(1) Defining the unit of analysis and determining the case to be studied**

In China, the government-funded public hospitals are still the main providers of medical services, and therefore public hospital reform has been a critical part of healthcare reform. The exploration of market-oriented public hospital consolidation starting from 1980s to nowadays has gradually become one of the modes of public hospital reform guided by China's governments. The First People's Hospital Group of Hefei City is one of the earliest public hospital groups and also one of the few public hospital groups that still operate well thus far in China. Therefore, with the

development of a hospital group as the research object, the study makes an in-depth analysis of its strategic choices, resource advantages, challenges from inside and outside in the course of development as well as solutions to the existing problems in a bid to share its successful experience and shed light on the reform and innovation of public hospital consolidation in China.

## **(2) Identify the questions and theories**

Public hospital consolidation in China initiated its way forward and has been beset with internal and external difficulties along the way. Meanwhile, there were no well-developed precedents to draw lessons from and there was also no unified mode, thus leaving much space for exploration and development. Along with the process of the healthcare reform in China, the First People's Hospital of Hefei City has progressed gropingly and experienced different consolidation modes from loose type to closely-knit type. After the consolidation reform and innovation, the hospital group has gradually become mature and showed its advantages. The development process has reflected the twists and turns of consolidation of public hospital groups. Therefore, in order to better understand this process and provide references for other hospitals, this research has selected the First People's Hospital Group of Hefei City, one of the first hospital groups that implemented the consolidation in China, as the research object, in an effort to conduct an in-depth analysis of its course of development.

The First People's Hospital Group of Hefei City inevitably faced difficulties and problems in its development. Then what are the influencing factors of these problems? How did the hospital take advantage of its own resources to effectively address them? Do the hospital groups need the policies and supports from government in order to ensure its healthy development? What light can the case shed on the consolidation of public hospital groups in China? All these issues are to be studied in this thesis.

Based on the strategic management theory, especially the resource-based theory, and according to the social environment, market environment and the advantageous resources of the First People's Hospital of Hefei City, the study analyzes the reasons

why the hospital has chosen the path of consolidation, the favorable factors that guarantee its smooth development and the results it has achieved. In addition, it identifies the internal and external difficulties encountered by the hospital and the factors affecting its development.

### **(3) Case Study Design**

In this study, the single case study is used because: first, the study aims to test a well-formulated theory such as the resource-based theory. The theory believes that the resources of an organization are an important unit of analysis and also the key sources of competitive advantages. Its essence is to explore the unique resources and distinctive competencies of organizations in a bid to enhance competitive advantages and generate excessive profits. The reason for sustained competitive advantage is the heterogeneous and immobile resources within organizations, some of which are valuable, scarce, inimitable and can be developed, utilized and rendered uniquely by the organizational processes of a firm. The resource dependence and allocation theory shows that one can get access to the resources of another through cooperation and alliances, which is an important means to access external resources.

These theories will be tested in the development process of the hospital consolidation in this study; second, all the relevant charts and data resources in this study come from documents and materials with high reliability and validity, including the annual report of the hospital, financial reports, development planning, and data published by health administrative departments. Considering the scope of collected data, as well as the need for objectivity and authenticity, the single case study is conducted; thirdly, vertical comparison is applied in this study, which means that the values of the same indicator in different times are confronted.

### **3.3.3 Data collection**

Data is collected from interviews, participant observation, archival records and direct observation. This study collects the literature about the development of hospital

consolidation and reform of public hospitals in China, which includes the definition of hospital groups and its five operating modes; the status quo of hospital consolidation development and results achieved thus far in other countries; the status quo of Chinese public hospitals, hospital level and evaluation criteria; the process of public hospital reform in China and the stage results achieved; the development of public hospital consolidation in China; the types of public hospitals groups at the current stage. Meanwhile, the strategic management theory and resource-based theory are also reviewed to provide theoretical support for this case study.

All the relevant materials involved in this thesis come from the hospital's documents, internal materials and official data published between 2004 and 2015 as well as direct observations and interviews. The first-hand data is obtained from in-depth interviews conducted between 2014 and 2016 with the middle and senior managers and medical staff of the hospital group, some of which are interviews focusing on special topics and some are group discussions. The questions that are asked in these interviews include "What is the development bottleneck of the First People's Hospital of Hefei City?" and "Is the consolidation strategy an effective way for the First People's Hospital of Hefei City to maintain sustainable development?" Meanwhile, we have also searched the corresponding second-hand data before the interview to avoid the omission and deficiency of original data. The second-hand data include the documents, records and internal materials, which come from the hospital's annual summary, financial reports, development planning, and the data published by the health administrative departments. The multi-source data collection channels have provided our research with important support. We have classified, sorted out and analyzed the above collected data. Table 3-1 below summarizes the data collected.



Table 3-1 Material Resources

Type	Quantity	Resources
Interview	25	President, managers, medical staff
Field survey	12	Headquarters hospital, Binhu hospital, west district, Medical Cosmetology Hospital, Luyang branch of the First People's Hospital group, three clinics (Taihu road clinic, Hupo clinic and government affairs center outpatient), three physical examination centers (Hefei Physical Examination Station, Health management center, Binhu physical examination center), Nursing home for the elderly in the west district
Internal materials	37	Hospital's annual summary, development planning, financial reports, statistical reports and bulletins.
Records	12	Hospital history, historical documents
Direct observation	3	Seminars, ward rounds
Literature	64	Journals, articles

Source: the author.

### 3.3.3.1 Interviews

In our research, we adopted formal and informal interviews. Typically the interviewer has some way of recording the information that is gleaned from the interviewees. In this case the researcher conducted the interviews and coopted an assistant for recording. After each interview, the two of them would immediately mutually check the contents and information of the interview. Some principles have been followed in interviews. First, the interviewers should receive professional training and have proven experience in investigation and meanwhile be familiar with the survey contents and areas. In non-structured interviews, experts or professionals with good knowledge of the research topics are qualified to act as the interviewer. In such case, the interviewer is actually the researcher himself. Second, the field recording and post-interview recording are used in combination. The answers provided by the interviewees to different questions are selectively and purposely recorded. The interviewees' response such as views, attitudes and opinions should be

literally recorded instead of using the interviewer's summary based on the interviewee's original words. Post-interview recording, as its name suggests, means the interviewer records the interview contents by recalling memories after interview. Third, the interviewer's feelings during the interview must be strictly distinguished from the information provided by the interviewees. The interviewee's response and interviewer's questions, observations and speculations must be clearly recorded in order that these collected data can be classified, sorted and analyzed. Generally, each interview should last for about one to three hours and the number of questions is more than two but less than eight.

Formal interviews: between 2014 and 2016, in-depth semi-structured interviews with 25 employees of the First People's Hospital Group of Hefei City were conducted. The 25 respondents include 16 men and nine women aging between 23 and 56 and working as doctors, nurses and executives respectively as per summarized in Table 3-2. Formal interviews were conducted on a semi-structured basis, mainly around research problems and research topics under the following question: first, "What is the development bottleneck of the First People's Hospital of Hefei City before the founding of hospital group?" a number of options are given to the respondents to choose from, which include: medical space is narrow; the beds are insufficient; the non-medical staff is overstaffed; the service coverage is limited; other factors, please specify...; second, "Is the consolidation strategy an effective way for the First People's Hospital of Hefei City to maintain sustainable development?" "What are the advantages?" "After the hospital group was established, what are the key factors affecting the development of the hospital group?"

Informal interviews: We also made informal interviews with some employees in the member hospitals of the First People's Hospital Group of Hefei City during our field visits to these affiliated hospitals and participated in some official and unofficial meetings. As of July 2016, the open-closed informal interviews on a semi-structured basis were conducted with more than 100 employees with different positions

(physicians, nurses, technicians and functional managers), different technical titles (senior title, vice-senior title, intermediate title and primary title), different ages (aging between 25 to 60), and different administrative levels (vice president, section chief, director of medical department and head nurse).

Table 3-2 Formal interviews

No.	Name	Hospital	Department	Age	Position	Technical title	Major
1	Wu Baoyu	Binhu hospital	Obstetrical department	42	head nurse	Supervisor nurse	Nursing science
2	Wang Changyi	headquarters hospital	Party office	44	division chief	Administration cadre	Party affairs
3	Cui Weiwei	Binhu hospital	Rehabilitation Department	32	head nurse	Supervisor nurse	Nursing Science
4	Huang Qinsheng	Binhu hospital	General office of hospital	32	clerk	Intermediate administration cadre	Journalism
5	Yu Linlin	Binhu hospital	Medical affairs department	32	staff member	Medical management	Health Management
6	Bao Yan	West district	Financial department	35	staff member	Accountant	Finance and Accounting
7	Xiao Xiaofeng	Binhu hospital	Department of Cardiology	51	head of department	Chief physician	Department of Cardiology
8	Zhang Jinxian	Binhu hospital	Financial department	49	Deputy division chief	Senior accountant	Finance and Accounting
9	LuoYang	Binhu hospital	Logistics	47	Section chief	/	Macroeconomics
10	Zhang Chunxiu	Binhu hospital	Anorectal department	37	head nurse	Supervisor nurse	Nursing Science
11	Ren Xuri	headquarters hospital	Medical affairs department	29	staff member	Medical management	Health Management

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12	Liu Zhonglong	headquarters hospital	Logistics	47	Head of logistics	Technologist-in-charge	Clinical Medicine
13	Li Ling	Binhu hospital	Hospital leaders	47	Vice president	Administration cadre	Administrative Management
14	Tan Xing	Binhu hospital	Personnel Department	49	Deputy division chief	Senior administration cadre	Human Resources Management
15	Zhou Yejin	headquarters hospital	hospital leader	56	Vice president	Chief physician	Hospital Management, Department of Orthopedics and Trauma
16	Tang Faxia	West district	hospital leader	54	Vice president	Chief physician	Hospital Management, Neurology Department
17	Yuan Gang	Binhu hospital	hospital leader	55	Vice president	Chief physician	Hospital Management, Gastrointestinal Surgery
18	Wen Jing	headquarters hospital	Department of endocrinology	46	head nurse	Supervisor nurse	Nursing Science

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19	Hu Yongsheng	headquarters hospital	Radiology department	54	head of department	Chief technician	Imaging technologies
20	Zhu Hong	headquarters hospital	hospital leader	58	Vice president	Deputy chief physician	Hospital Management, Respiratory Medicine
21	Wang Qingbo	headquarters hospital	Personnel Department	43	Division chief	Senior administration cadre	Human Resources Management
22	Yang Fei	headquarters hospital	Department of cerebral surgery	44	head of department	Deputy chief physician	Department of cerebral surgery
23	Pei Hua	headquarters hospital	Emergency	33	head nurse	Supervisor nurse	Nursing Science
24	Li Wen	headquarters hospital	General office of hospital	34	staff member	Administration cadre	/
25	Wu Donglei	headquarters hospital	hospital leader	58	Vice president	Deputy chief physician	Hospital Management, Department of cerebral surgery

Source: the author.

### **3.3.3.2 Field visits**

We paid field visits to the affiliated hospitals of the First People's Hospital Group of Hefei City. In addition, we participated in some large meetings organized by the group and held numerous meetings discussing the business operations and strategic development with senior managers. A full meeting record for each meeting was kept. The aim was to reach a good understanding of the factors affecting the development of hospital consolidation in this particular case. The member hospitals to which we had paid field visits and their brief introduction are presented in Table 3-3.

Table 3-3 Profile of the affiliated hospitals under Field Survey

Hospital name	Brief introduction
Headquarters hospital	Founded in 1954 and located in the central district of Hefei City, the First People’s Hospital of Hefei City is a large scale Grade III Class A general hospital integrating medical services, teaching, scientific research, healthcare, prevention, rehabilitation, emergency, physical examination and end-of-life care. The hospital has 90 medical departments and medical centers with large high-end medical equipments such as 16-slice Spiral CT, large C-shaped X-ray machine, small C-shape X-ray machine, MRI, DSA, CR, DR, heart color Doppler ultrasound machine, abdominal Doppler ultrasound machine and Automatic biochemical analyzer.
Binhu hospital	Locate in the new district of Binhu in Hefei City, Binhu hospital is a non-profit third-level modern general hospital integrating medical services, teaching, scientific research, prevention, health care and rehabilitation. Occupying an area of 133,000 square meters and with a total planning building area of 360,000 square meters, the hospital plans to have a total of 3,000 beds. Currently, the buildings with a floor area of 230,000 square meters have been completed and put into use. 2,200 beds are available but only 1127 beds are in use. In 2012, the hospital has 300,000 outpatient and emergency visits, 32,000 hospital admissions and nearly 10,000 surgical operations. The hospital has 42 clinical departments and 17 medical departments with 1,536 employees including 512 medical staff, 853 nurses, 41 professors, 47 vice professors, one doctoral supervisor, 31 master supervisors, 39 persons with doctor’s degree and 415 with master degree, 61 with senior title and 178 with vice senior title.
West district	Located in the Shunshan Mountain Forest Park at the foot of Dashu Mountain, the Shushan branch in west district is a subsidiary of the First People’s Hospital of Hefei City approved by Department of Health in 2013. With a total building area of 25,000 square meters, Shushan branch has 21 medical departments, 11 ward areas, 500 beds and 50,000 annual outpatient visits, as well as modern operation rooms and delivery rooms. It currently has 240 employees with 6 having senior title and 18 with intermediate title.

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Medical Cosmetology Hospital	The Medical Cosmetology Hospital of the First People's Hospital of Hefei City is a modern professional medical plastic and cosmetic surgery organization integrating clinical services, scientific research, teaching and international academic exchange. With complete sets of high-end equipments, pleasant environment, famous expert team and professional medical staff, the hospital specialize in cosmetic surgery, laser cosmetology and skin (beauty) care. Currently, it has become the largest professional cosmetic organization with most advanced equipments and full range of treatments in the Anhui province.
Luyang branch of the First People's Hospital of Hefei City	The Luyang branch of the First People's Hospital of Hefei City (Rehabilitation Center) is managed by the First People's Hospital of Hefei City. The main departments of the center are headed by a group of senior directors and experts sent by the First People's Hospital of Hefei City. At present, the center has the Department of internal medicine, Surgery, Department of Gynecology, Department of orthopedics, Hematology and Oncology, Ophthalmology, Department of Stomatology, Radiology, ECG and ultrasound department, laboratory and pharmacy. There are a total of 100 beds. The inpatient wards are available in the Department of orthopedics, Hematology and Oncology, General Internal Medicine and Ophthalmology. The center also provides all kinds of health consultations and physical examinations.
Three clinics	<ol style="list-style-type: none"><li>1. Taihu Road Clinic: Affiliated to the First People's Hospital of Hefei City and covering an area of 1,000 square meters, the clinic is headed by Liu Hongxia, with clinical departments including Department of internal medicine, Surgery, Pediatrics, Gynecology, Ophthalmology &amp; Otorhinolaryngology, Department of Stomatology, Department of Traditional Chinese medicine, medical cosmetology, acupuncture and massage department, blood pricking department.</li><li>2. Hupo Clinic is a community health service center established in August 2001, which has Surgery, Internal Medicine, Department of Stomatology, Department of Traditional Chinese Medicine, Gynecology, and Pediatrics. It has opened green treatment channel and the patients with difficult and critical diseases will be referred to the First People's Hospital of Hefei City.</li><li>3. Government affairs center clinic.</li></ol>

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Three physical examination centers	<ol style="list-style-type: none"><li>1. The Hefei Medical and Health Care Center of the First People's Hospital of Hefei City is a comprehensive medical organization specializing in physical examination, sub-health treatment, cadre health care, medical treatment and health preservation as well as aged care. It is also the designated medical care hospital and the largest and professional physical examination center in the Anhui province, which provides physical examination services and issues health certificates for prospective candidates of provincial and municipal civil servants, candidates of women soldiers and cadres.</li><li>2. Founded in March 2007, the health management center of the First People's Hospital of Hefei City has adhered to the principles of "Cherish life, care for health, sincere service, quality first" and is committed to providing convenient, quick and high-quality physical examination services for customers.</li><li>3. With a building area of about 2,000 square meters, the physical examination center of Hefei Binhu hospital has waiting hall, health examination rooms and office area. The physical examination area is completely isolated from the outpatient and inpatient wards, thus avoiding nosocomial infection and cross infection.</li></ol>
Nursing home in west district	<p>Covering an area of 67 mu, the nursing home of the First People's Hospital of Hefei City plans to provide 500 beds. In the first phase, 155 beds are put into use with 76 beds for aged people with disability and semi-disability, 52 beds for health maintenance of retired veteran cadres, 24 beds for home-based aged care and 79 beds for end-of-life care. The nursing home has the paintings and calligraphy, chess and cards room, multi-functional hall, DIY plantation area, rehabilitation room and recreational equipments. Currently, it has 65 medical staff with 1 chief physician, 3 physicians in charge, 2 resident physicians, 1 president and academic leader of nursing science, 3 head nurses, 5 nurse specialists, 22 specialized nurses and 33 assistant nurses.</p>

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Source: the author.

### **3.3.3.3 Participant observation and direct observation**

In order to have an in-depth understanding of the research object and gain novel insights, the researcher gets intensively involved in a social group and observes and participates in various activities of the group as an “insider” in order to gather useful data for the subject of a study (Fan & Fan, 2010). Without bothering the lives of those being studied, the participant-observer can obtain more detailed and accurate data. In addition, because the research is not only an observer as an outsider, but a participant of various activities as an insider, he can deeply understand and get access to the information which is difficult to obtain by other methods, including semi-participant observation. Thus, the direct observation can not only reveal the essence of social phenomena, but also give veridical insight into the people’s thoughts and feelings behind these phenomena (Gao & Wang, 2002). In direct observation, a researcher watches and records the social behaviors and phenomena that are happening in their natural setting (Gao & Wang, 2002).

Besides, the data recording is an important work in observation method. The data and observations recording will help researchers to gather useful data for further analysis and drawing conclusions. In this process, researchers are encouraged to record their personal thoughts and feelings about the subject of study and decide what should be recorded and observed.

### **3.3.3.4 Documents and archival records**

One important aspect of documents is that the evidences obtained from other data collection methods can be verified. The archival records include work logs, maps, charts, register of names and survey data (Sun & Zhu, 2004). The data could be gathered through access to public documents and archival records of the First People’s Hospital of Hefei City, such as meeting minutes, annual plans, annual summary reports, hospital newspapers, hospital journals and related articles published by various media. The various kinds of open data it can also be obtained from the general office of the hospital group, archives room, personnel department, financial department, medical affairs department, general affairs department, equipment

department and official website. In order to learn about the hospital group surveyed, we can collect all kinds of archives such as the big events in different periods, yearbooks and business plans. Besides, the relevant policies, regulations, health statistical reports published by the national, provincial and municipal health administrative departments can be collected and referenced (Table 3-4).

The collection of second-hand data, in-depth interviews and field visits constitute the “triangular verification” (Miles & Huberman, 1994). Based on the primary data derived from in-depth interviews, field visits and direct observation among multi-identity groups, the research work can be carried out in a scientific and rigorous manner and the research problems can be analyzed more effectively, supplemented by the second-hand data.

Table 3-4 Sources of documents and archives  
of the First People's Hospital of Hefei City

Office	Documents
General office of hospital group	Hospital meeting minutes, annual hospital plans, hospital annual work reports, work reports on hospital workers' representative meetings, hospital documents, publications (for example, hospital newspaper, hospital journals), hospital rules and regulations, and pictures.
Archives room	Historical documents, historical records and pictures.
Personnel department	Personnel records, personnel documents, annual personnel reports, annual personnel plans, personnel regulations
Financial department	Annual financial statements, annual financial plans, financial documents, financial regulations
Medical affairs department	Annual medical work report, annual medical work plan, medical documents, medical rules and regulations
General affairs department	Annual construction report, annual construction plan, construction documents, rules and regulations, and pictures.
Equipment department	Annual work report on equipments, annual equipment plan, equipment document, equipment management regulations
Official website	<a href="http://www.hfyy.cn/default.asp">http://www.hfyy.cn/default.asp</a>
Others	The 13 <sup>th</sup> Five-year development plan of the First People's Hospital Group of Hefei City; The 12 <sup>th</sup> Five-year development plan of the First People's Hospital Group of Hefei City; Yearbook of the First People's Hospital of Hefei City (2003); Work summary of the First People's Hospital of Hefei City (2005).

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Source: the author.

### 3.3.4 Data processing

The collected data is transformed into structured and organized data through sorting, classifying and screening. Then the preliminarily processed data are encoded to form a coding table. For example, the responses to an interview can be marked by different codes.

Table 3-5 Coding sample

1	2	3	4	5
Narrow medical space	shortage of beds	Surplus of non-medical personnel and heavy cost burden	Limited services coverage	Other factors, Please specify...

Source: the author.

The number in the table labels the different types of collected data, among which, 1 represent narrow medical space; 2 represent shortage of beds; 3 represents Surplus of non-medical personnel and heavy cost burden; 4 represent limited service coverage; 5 represent other factors.

Apart from statistical data, the collected data also include data recorded in text, which cannot be converted into statistical data. Compared with digital data, it is more difficult to sort out and process textual materials. The processing of text data includes verifying the authenticity of the data and categorizing data manually using inductive and summarizing methods. The similar and same information can be edited into reports according to a pre-determined classification system. During the analysis, we will keep examining the recorded texts gathered from interviews and field visits as well as second-hand data, thus consolidating our conclusions. Finally, through the cross checking of theories and phenomena, we hope to deeply understand the whole analysis process.

## **Chapter 4 - Overview of Theoretical Basis**

This chapter reviews relevant knowledge on strategic management theory and specifically on the resource-based theory, which lay a theoretical foundation for this research and the case study in the thesis.

### **4.1 Strategic Management Theory**

#### **4.1.1 Definition of Strategic Management**

The original meaning of strategy is to plan and guide the overall situation of wars. The application of strategic ideas and theories into the management of organizations concerns a master and long-term plan formulated to better adapt to the future changes in the environment and seek long-term survival and stable development (Rao, 2009).

In 1962, Chandler's published a book entitled *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*. According to Chandler, strategy is the determination of the basic long-term goals of an enterprise, the adoption of courses of action and the allocation of resources necessary for carrying out these goals. He argued that except under the strongest pressures, executives have rarely changed their old daily routines and practices to seek new forms of organization. Only when they come to realize that enterprises are facing severe challenges and there are urgent needs for change, will they develop what is called the "strategy". And the strategy they choose decides its organizational structure. Because of this famous book, Chandler is thought as one of the founders in the strategic management field. The interaction between strategy and structure has since become an eternal theme of the corporate strategy research (Chandler, 1962, Chinese translation: 2002).

In 1972, Ansoff published an article entitled Strategic Management in the *Journal of Business Policy*, officially putting forward the concept of "strategic

management”. In 1979, he further extended his ideas in the book entitled *Strategic Management*. According to Ansoff, business strategic management refers to a series of management business practices formed through the combination of daily decision-making and decision-making on long-term plans of a business. Ansoff believes that strategic management is composed of four elements: product and market scope, growth vector, competitive advantage and synergetic effect. Specifically, the basic elements related to strategic management include mission, vision, overall objectives, specific objectives, strategic formulation, strategic implementation, strategic control (Ansoff, 1979, Chinese translation: 2010).

Jay Barney, recognized as the father of the modern resource-based view (RBV) of the firm, suggests that resource heterogeneity or firm-level differences among firms may allow some of them to sustain competitive advantage. Therefore, the RBV emphasizes strategic choice, charging the management of the firm with the important tasks of identifying, developing and deploying key resources to maximize returns (Barney & Hesterly, 2009, Chinese translation: 2010).

A review of the different interpretations by different scholars and practitioners suggests that strategic management can be divided into strategic management in the broad sense and strategic management in the narrow sense. In the broad sense it refers to the application of strategies to the management of the whole enterprise, whereas in the narrow sense it refers to the formulation, implementation, control and revision of strategies. Strategy refers to the adoption of courses of action based on consideration of resources and on the assessment of the internal and external environments in which the enterprise competes. Strategic management is a process focusing on constantly adjusting courses of action in order to achieve an intended set of goals. Essentially, strategies are established to set directions and provide consistency or guidance in response to the environment.

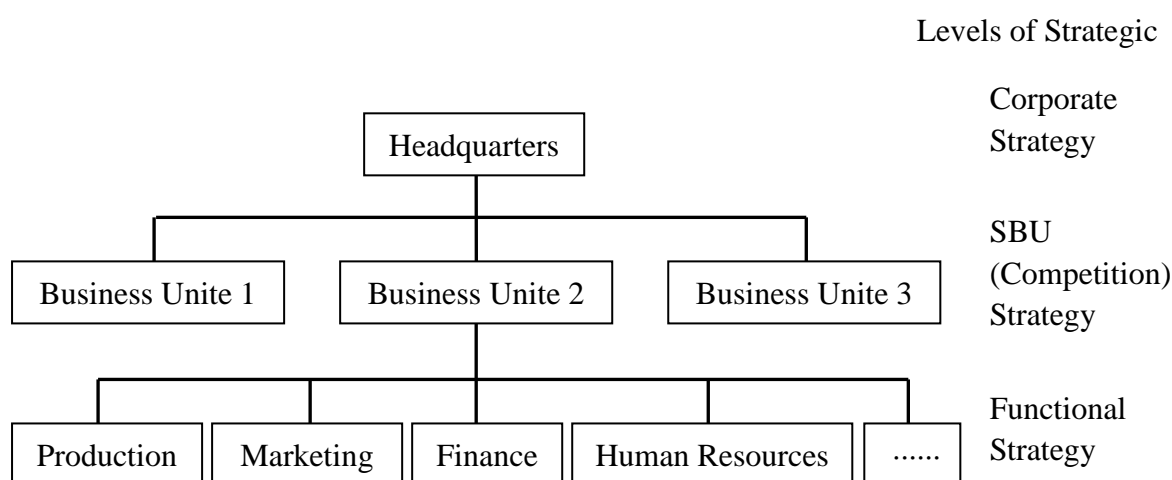


## 4.1.2 Levels and process of strategic management

### 4.1.2.1 Levels of strategic management

Based on the organization structure, the strategic management can be performed in three levels, namely corporate strategy, business unit strategy and functional strategy, as pictured in Figure 4-1 (Foss, 2002; Liu, 2003; Meier et al., 2007).

Figure 4-1 Levels of strategic management



Source: Liu (2003)

#### (1) Corporate strategy

The corporate strategy refers to the overall strategic plan of a firm, whose goals are to set direction, coordinate the relation between business units, optimize allocation of resources and cultivate core competitiveness. Specifically, it primarily concerns what the organization's business is and how to develop this business (for example, products and market segments, growth vector). The formulation of the overall strategy is a hospital's process of defining its development direction according to the goals. It is essentially a holistic and long-term strategic behavior that is primarily concerned with the overall development of a hospital. Therefore, from the hospital's development direction, department coordination, utilization of tangible resources,

values, to the construction of its culture, all of these important parts of the hospital's overall strategy. The overall strategy concentrates on the following three aspects: first, regard the realization of social values as the ultimate goal of hospital strategy; second, according to its own characteristics and advantages, the hospital will give full considerations to the external and industrial environment in which it operates then formulate specific overall strategy in favor of the hospital's development; third, create value through configuring, constructing and coordinating its activities in the medical field (Quan, 2008).

### **(2) Hospital business strategy**

Hospital business strategy refers to the strategy of business units under the guidance of overall strategy, that is the work plan and strategies of particular department. The business strategy is primarily concerned with the plan of actions of a particular department that provides a specific service and competes in a specific market segment. The business strategy determines whether a specific department can gain a position of advantage over adversaries, or best exploiting emerging possibilities, which can to some extent affect the realization of the overall strategy of a hospital (Shi, 2009).

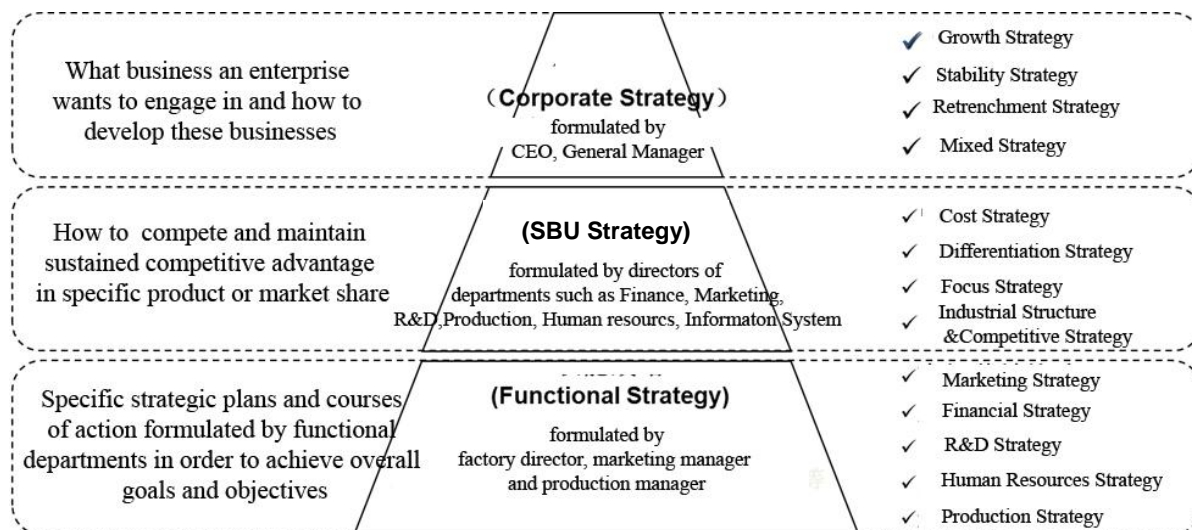
### **(3) Functional strategy**

The functional strategy is primarily concerned with the specific strategic plans and courses of action formulated by the functional departments like production department, marketing department, human resources department, technological department and financial department in order to achieve overall goals and objectives. It is about how strategic management at the corporate and SBU level is actually done (synergistic effect).

Corporate strategy, SBU strategy and functional strategy constitute a complete system of corporate strategy. Each strategy at a higher level sets direction and lays foundation for the strategy in its next subordinate level; in turn, the lower strategy provides support and guarantee for the strategy in its immediate upper level. These strategies in three levels constitute an organic whole which relate mutually. The interplay of these strategies contributes to the achievement of the firm's overall

strategic goals, as depicted in Figure 4-2.

Figure 4-2 Structural relationships among levels of strategic management

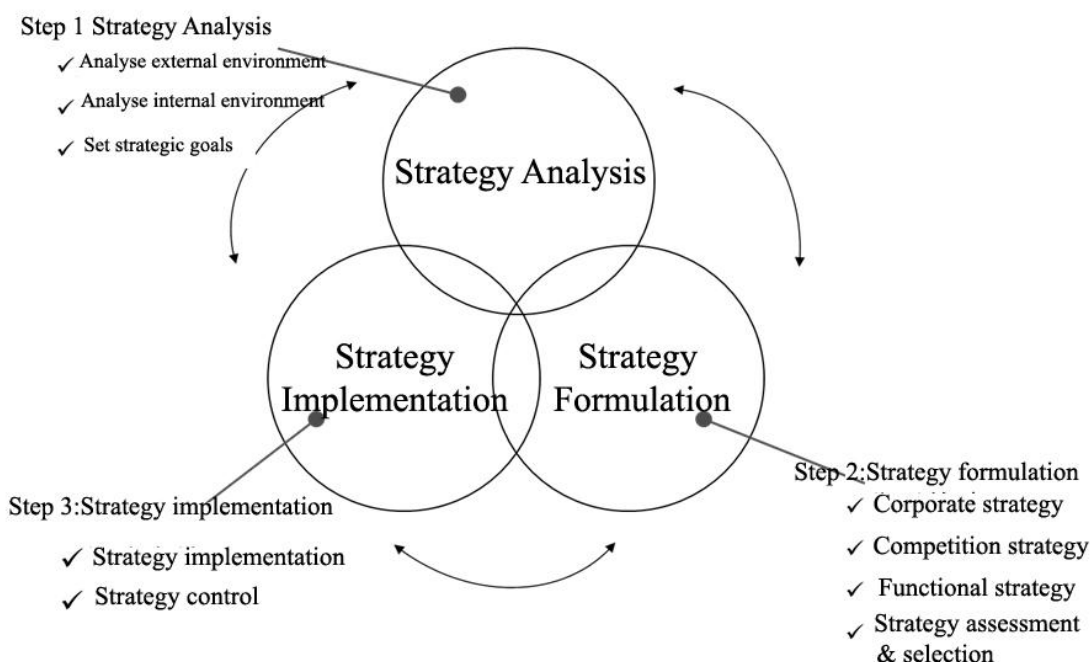


Source: Xu (2004)

#### 4.1.2.2 Process of strategic management

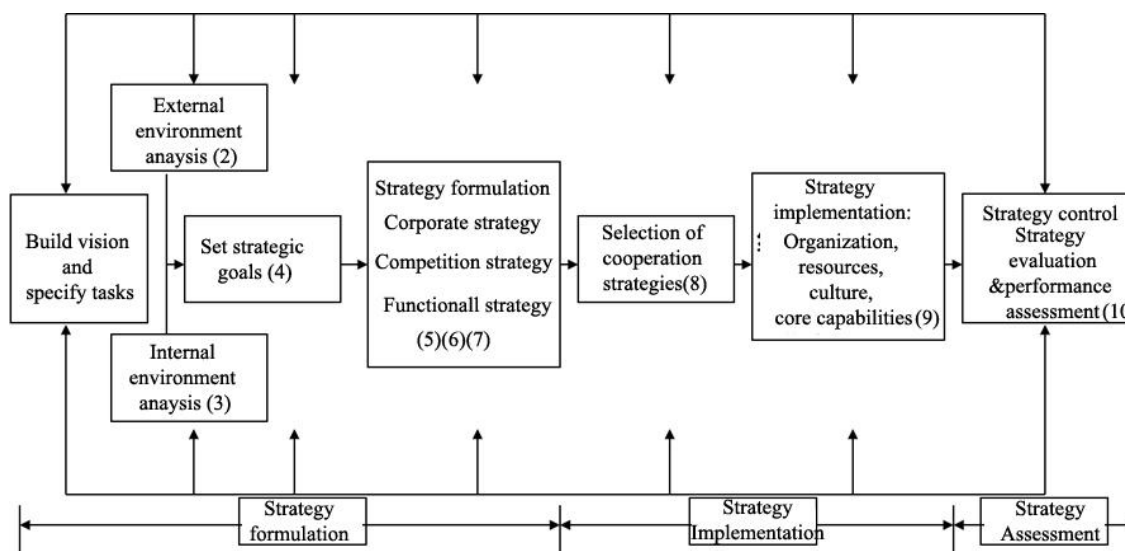
The strategic management deals with a series of important issues in allocating internal resources in order to achieve overall strategic goals, which involves three stages: strategic analysis, strategic formulation and strategic implementation (Figure 4-3). These three stages interact and mutually restrict each other. Therefore, properly handling their relations is extremely important to the efficient operation of the strategic management system. The strategy management process is depicted in Figure 4-4.

Figure 4-3 Process of strategic management



Source: Liu & Liu (2001)

Figure 4-4 Steps in Strategy Formulation, Implementation and Assessment



Source: Liu & Liu (2001)

**(1) Stage of strategy analysis**

Before performing strategic analysis, it is necessary to analyze the environment in which an enterprise operates. The main purpose of the strategic analysis is to assess

the key factors that can potentially affect the current and future development of the enterprise and then identify the specific factors that can influence strategic formulation. The strategic analysis mainly includes three aspects:

(a) Analysis of external environment. The enterprise must analyze the key external environmental factors that can influence the strategy formulation and utilize PEST analysis to give an overview of the different macro-environmental factors (political, economic, social and technological landscape) and their impact on enterprise's development; it is also necessary to comprehensively use the analysis methods like industry lifecycle analysis, industry chain analysis, key successful factors analysis, industry attractiveness analysis, structure-conduct-performance analysis and diamond model analysis to assess the external environment in which it operates and the effect of macro-environmental factors on the enterprise, such as the competitive rivalry of firms in the industry, the bargaining power of buyers and suppliers, the threat of new entrants, and the availability of substitute products (Wang, 2010).

(b) Analysis of internal environment. Aside from the analysis of external environment, the enterprise needs to utilize self-sustainability recognition technologies, operation system assessment technology, internal factors matrix and radar map and other analysis methods to comprehensively assess the enterprise's historical accumulation (reputation), present situation (resources available) and future potentials (strategic capabilities). Through systematically assessing the strengths and weakness, the enterprises can have a clear understanding of their actual conditions and thus correctly position themselves in the marketplace. Meanwhile, the internal analysis should take the interests and expectations of stakeholders into consideration. For example, how will the stakeholders respond to strategic management? What influence of these responses will have on organizational behaviors (Wang, 2010)?

(c) Analysis of competitive advantages. The analysis of external and internal environment is still not enough to get a whole picture of the enterprise. It is necessary to use classification of strategic groups, benchmarking method and SWOT analysis method to assess the strengths and weaknesses of the firm in light of the opportunities

and threats in the business environment in order to make correct strategic decisions (Wang, 2010).

### **(2) Stage of strategy formulation**

Based on the strategy analysis, the enterprise will develop and formulate business strategic plans. The strategy formulation involves basis for strategic formulation, selection of business strategies and strategic alternatives (Liu, 2011).

### **(3) Stage of strategy implementation**

Strategy implementation mainly includes strategic resources allocation and strategic control, which mainly answers the following problems: how to better implement strategies in the context of the current enterprises culture? What are the relationships between various types of organizational structures and strategies? What are the different implementation methods to choose from? What skills does an enterprise need to have in order to successfully implement strategies? The strategic implementation mainly includes strategic resources allocation and strategic control (Hu & Wan, 2003).

(a) Strategic allocation of resources. The successful implementation of strategies is guaranteed by adequate resources, first by assessing those required by the implementation of a strategy, then effectively and reasonably allocating internal resources and efficiently utilizing external resources in order to gain more output with less input.

(b) Strategic control, which is necessary to effectively control the effects of strategy implementation. Strategic control is a special organization control aiming to improve the effects of strategy implementation through supervising and assessing the strategic management process. The strategic control needs to comprehensively consider the organization and the strategy implementation system in order to effectively assess strategy performance and perform risk management.

## **4.2 Corporate Strategic Management Theory in Different Periods**

The evolution of the strategic management idea from its emergence to maturity is

always closely associated with market competition. All strategic management ideas, without exception, focus on how to formulate and implement competition strategies and gain competitive advantages.

#### **4.2.1 Initial Corporate Strategic Management Theory**

Chandler's 1962 book *Strategy and Structure - Chapters in the History of the American Industrial Enterprise*, was a pioneering research on corporate strategy. In this great work, Chandler analyzed the interrelationships between environment, strategy and organization, and examined the common phenomena of emergence and development of American enterprises and their management structure. Taking the historical development of Du Pont, General Motors, Standard Oil, and Sears as an example, he examined the growth and development of American large corporations and gave a detailed account of their shift from unitary structures to multidivisional structures and how these corporations adjusted their organizational structure to adapt to their own development in the early 20<sup>th</sup> century. He also put forward the proposition of "structure follows strategy", which suggests that corporate strategy is influenced by the environment and corporate expansion strategy must be followed by corresponding structural changes. Therefore, Chandler is universally recognized as the first corporate strategist of the environment-strategy-organization theory (Chandler, 1962, Chinese translation: 2002; Chen, 2009; Rao, 2009).

In 1965, in his book *Corporate Strategy*, Ansoff, American famous strategic management scientist, first classified corporate strategy into overall strategy and business strategy. Besides, in his highly influential paper *The Concept of Strategic Management* published in 1972, he asserted that the strategic management should be applied throughout the whole process of the business operation, instead of just using it in strategic planning. Afterwards, in his book *Strategic Management* published in 1979, he proposed eight constituents of strategic management, including external environment, strategic budget, strategic power, management ability, power, power structure, strategic leadership and strategic behavior (Ansoff, 1979, Chinese translation: 2010). In his book *The Concept of Corporate Strategy* published in 1971,

Andrews, American famous professor at Harvard Business School first put forward the concept of corporate strategy. His strategic management model involves the formulation and implementation of strategy and uses SWOT analysis in strategy formulation.

On this basis, a multitude of figures and schools emerged to engage in the research on the strategic architecture, among which there were two important and similar schools: the “Design School” and the “Planning School”. Their core ideas are essentially consistent with Chandler’s ideas, insisting that corporate strategy should be purposefully devised to adapt to the environment. Essentially, it is the adaptation process of the organization to the environment where it is in and the resulting process of change of the organization’s internal structure (Wang & Wan, 2002; Duhaime et al., 2004).

#### **4.2.2 Corporate Strategic Management Theory in the Middle and Late 20<sup>th</sup> Century**

People’s understanding of strategic management has experienced a tortuous process. After World War II, America’s unprecedentedly flourishing economy was followed by increased competition. By the 1970s, the turbulence of international politics and economy made the survival and development of firms increasingly difficult. In this new competitive environment, the competitive strategy theory put forward in the early 1980’s by Michael Porter from Harvard Business School took dominance among strategic management theories. Competitive strategy theory indicates that a firm takes long-term offensive or defensive actions to compete with its competitors for the same use value. Porter has provided three potentially successful generic strategic approaches to help a firm outperform rivals in an industry including overall cost leadership strategy, differentiation strategy and focus strategy. He claims that the core of corporate strategy is to gain competitive advantages, which relies primarily on the profitability of the industry where a firm is in and its relative competitive position in the industry (Wang & Wan, 2002; Hu & Miao, 2008; Rao, 2009).



### 4.2.3 Corporate Strategic Management Theory in the Late 20th Century

In the 1990s, people began to rethink profoundly the strategy management theory because they found that many organizations could only operate for seven to eight years before they were closed down and many industries were short-lived. The reasons were because these firms and industries lacked strategic management and strategic planning for the long-term development.

Enterprises started then to turn their attention from the external environment to the internal environment. In this way, they focus more on the accumulation of their own distinctive resources and knowledge (technologies) to form unique enterprise competitiveness. In 1990, Prahalad and Hamel published “The Core Competence of the Corporation” in *Harvard Business Review*, forming the “core capability school” in strategic theory. The theory holds that the core competence of a corporation indicates the unique skills and technologies that enable firms to bring special benefits to customers. Through effectively integrating internal and external resources, factors and abilities, a firm can obtain diverse unique resources including knowledge and technologies that cannot freely flow among firms and are also not controlled and imitated by competitors, and meanwhile help maintain sustained competitive advantage and generate stable profits. This theory emphasizes the decisive role of an enterprise’s internal conditions for maintaining its competitive advantages and gaining excess profits (Wang & Wan, 2002; Zhou et al., 2004; Rao, 2009).

However, while making up for the deficiency of Porter’s structural theory of underlining enterprises’ external analysis, the core capability theory has its own deficiencies. Too much attention on an enterprise’s internal conditions has resulted in an imbalance of the enterprise’s external analysis. In order to solve this problem, in 1991, Barney argued in his work entitled *Firm Resources and Sustained Competitive Advantage* that a firm can grow to a certain extent through obtaining “VRIN” resources, or more specifically, valuable resources, rare resources, inimitable resources and non-substitutable resources. In 1995, Collins and Montgomery published the thesis entitled “Competing on Resources: Strategy in the 1990s” in

*Harvard Business Review*. This thesis focuses on a more in-depth understanding of enterprise resources and capabilities and expounds on the resources-based view of the firm in the belief that assessment of values cannot be limited within an enterprise, and that an enterprise in order to be placed in its industry environment and in comparison with its competitors should be made to identify the valuable resources it has (as cited in Zhou et al., 2004; Hu & Miao, 2008). These concepts will be further explored in this chapter.

#### **4.2.4 Strategic Management Theory in the Turn of Century**

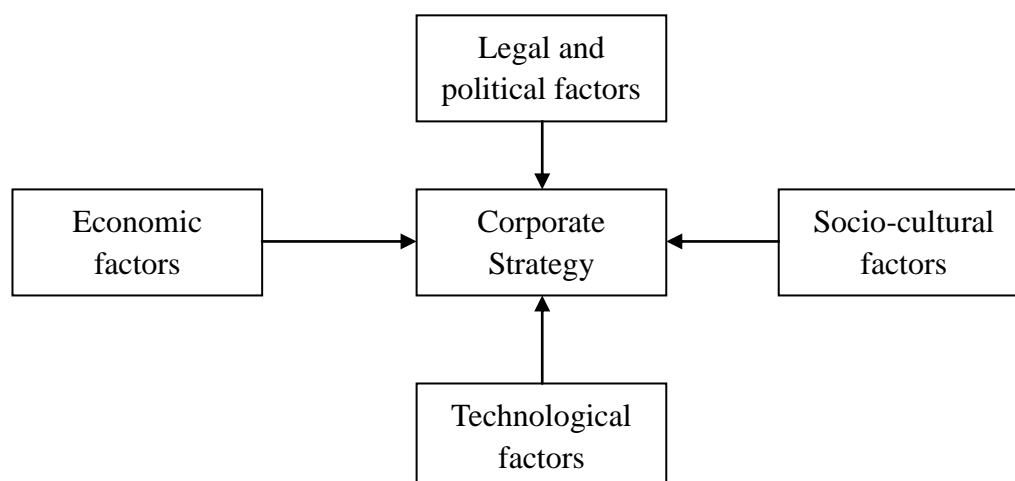
Most enterprise strategic management theories before the 1990s were established on the basis of contest competition and focused on discussing competition and competitive advantages. Under the trend of global economic integration and diversification of competition, the emergence of the strategic alliance theory has shifted people's focus of attention to the various forms of alliances between enterprises. This theory underlines competition and cooperation, and believes that competitive advantages are constructed on the basis of the combination of one's own advantages and others' advantages. With the dynamism of industry environment and acceleration of technological innovation, the globalization of competition and customers' demand have become more and more diversified. Enterprises have gradually realized that whether they want to develop their own abilities or expand new markets, they will need to join hands with other companies to create new values that customers are interested in. Enterprises must cultivate development-oriented collaborative economic groups. In this context, gaining a competitive edge in competition through innovation and creation has become a new focus of enterprise strategic management research (Zhou et al., 2004; Hu & Miao, 2008; Tan & Ding, 2014).

## 4.3 Strategic analysis tools

### 4.3.1 PEST analysis

PEST analysis is a strategic tool for scanning different macro-environmental factors that can affect the development of an organization. The macro-environmental factors include political factors, economic factors, social factors and technological factors, as depicted in figure 4-5.

Figure 4-5 PEST analysis



Source: Lan (1993)

### 4.3.2 SWOT analysis

SWOT analysis is an acronym for strengths, weaknesses, opportunities, and threats and is a structured planning method that identifies and evaluates those four elements of an organization. Based on the SWOT matrix, scientific research methods are utilized to match the strengths to opportunities and convert weaknesses or threats into strengths or opportunities. If the threats or weaknesses cannot be converted, a company should try to minimize or avoid them, as depicted in figure 4-1.

Table 4-1 SWOT matrix analysis model

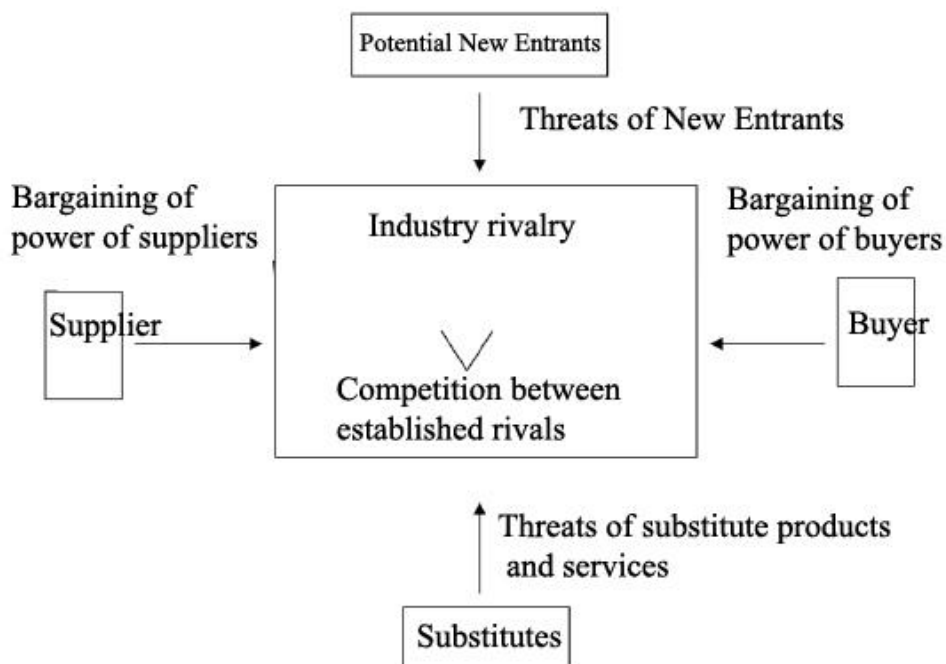
	Strengths (S)	Weaknesses (W)
	1. Strong technical strength 2. Skilled workers	1. Lack in-depth management 2. Uneven distribution channels
Opportunities (O)	Strength – Opportunity Strategies	Weakness – Opportunity Strategies
1. Increasing consumption of product X of A company 2. Declining market share of competing company B	2-1 Main technical advantages and pay close attention to the consumption trend of product X 2-2 Employ the skilled workers in competing company B	2-1 Meet the increasing consumption needs for the product X in target market in order to maintain strong competitiveness
Threats (T)	Strength – Threat Strategies	Weakness – Treat Strategies
1. Potentially being affected by market regulations 2. Rival company C is growing stronger	1-1 Try to develop new technology in endeavor to avoid being affected by market regulations 2-2 Constantly improve the skill of worker and satisfy their needs	1-1 Avoid being affected by market regulations because of weak management 2-2 Try to minimize the threats caused by the increasing market share of rival company C

Source: Lan (1993)

### 4.3.3 Porter’s five forces analysis model

Porter’s five forces analysis model had a rapid global impact immediately after it was proposed by Michael Porter in early 1980s. The model is used to analyze the competitive strategy through five forces that determine whether an organization can achieve success or not. The five forces include bargaining power of suppliers, bargaining power of customers, threat of new entrants, threat of substitutes and the competitive ability of rivalries in an industry, as depicted in Figure 4-6.

Figure 4-6 Porter's five forces analysis model



Source: Porter (1997, Chinese translation: 2005)

## 4.4 Strategic Alliances

### 4.4.1 Definition

Strategic alliance is a strategic management thought that has been popular internationally since the 1990s. The definitions of strategic alliance are varied in the academic circles. For example, Williamson (1983) describes it as non-standard commercial market contract; Thorelli (1986) calls it a set of interconnected nodes from the perspective of the multi-laterality of alliance organization; Porter (1997) defines it as long-term agreement between businesses that go beyond normal market transactions but fall short of mergers; according to Barney (1991), the strategic alliance indicates that two or more mutually independent organizations make joint efforts to develop, produce and sell products or services (Song et al., 2011; Tan & Ding, 2014).

#### **4.4.2 Value Created by Strategic Alliances**

Strategic alliances between enterprises can at least bring the following advantages: achieve complementary advantages, reduce repeated investment, lower operational risks and increase business strength. In addition they can:

##### **(1) Improve the Operating Performance of Enterprises**

Economies of scale are cost advantages resulting from the fact that the cost per unit of output generally decreases with increasing scale (Barney & Hesterly, 2009, Chinese translation: 2010). Therefore, forming strategic alliances is one of the effective ways to help enterprises achieve economies of scale and further improve operational efficiencies. For the independently operated enterprises that cannot achieve economies of scale, they can gain cost advantages in production by entering into strategic alliances with other enterprises. Meanwhile, because enterprises with different resources and capabilities in the same industry have their own unique competitive advantages, the strategic alliance can help those enterprises at a disadvantage to obtain advantages in resources and capabilities. Therefore, by joining a strategic alliance, enterprises can reduce their operation risks and share costs, thus improving current operating conditions (Barney & Hesterly, 2009, Chinese translation: 2010; Zhang, 2012).

##### **(2) Create a Favorable Competitive Environment**

On the one hand, strategic alliances can facilitate the formulation of industry technical standards, thereby enhancing the value of technical products, which in particular has great implications for the internet-related industry. On the other hand, the partners in an alliance can realize indirectly agreed output, quality and prices, and make hidden cooperation and tacit collusion so as to boost their profits (Barney & Hesterly, 2009, Chinese translation: 2010).

##### **(3) Reduce Market Barriers to Entry and Exit**

Strategic alliances can make it easy for a firm to enter or exit an industry or market. For instance, if a firm wants to enter an industry or market, it can enter into an alliance with other firms to acquire techniques and capabilities necessary to produce

products at a relatively low cost. Again, if a firm wants to exit from a market segment, it has to evaluate the assets that have been put into the market, including plants, places of sale, technologies, brand and employees. But if such firm has formed an alliance with other firms, its assets can be directly assessed and meanwhile it can acquire valuable industry information to avoid unnecessary waste caused by asymmetric information (Barney & Hesterly, 2009, Chinese translation: 2010).

In general, the formation of strategic partnerships has given enterprises access to resources that are internally lacking, which can not only improve efficiency in the use of resources and reduce the sunk costs, but also save inputs in acquiring new resources and reduce switching costs, therefore reducing entry and exit barriers and making the strategic adjustment more flexible. Rapidly increasing the density and speed of information dissemination among partners can avoid the blindness of single enterprise in R&D and reduce the repetitive labors and resource waste arising from independent operation, thus ensuring “resource saving” from input to output. Cooperation within alliances can create a relaxed environment in which the partners can freely share knowledge, mutually transfer technologies to accelerate the process of R&D, acquire the information and knowledge that are internally lacking and achieve synergy effects of different corporate cultures, thus further enhancing and updating the enterprise’s core capabilities (Ren & Jie, 2013; Shang, 2011).

## **4.5 Resource-based Theory**

### **4.5.1 Origin of Resource-based theory**

Many scholars argued that the origin of the resource-based theory may be traced to Penrose’s *The Theory of the Growth of the Firm* published in 1959. In this book, she proposed a theory on the growth of the firm, arguing that the firm’s resources and capabilities considered as a “Black box” by the neoclassical theory of the firm are actually a collection of productive resources determined by management decisions and serves different purposes. In her view, the firm is a collection of resources that is

coordinated and restrained by an administrative framework. The internal resources of a firm are the engine of growth of the firm (Fan, 2015). The enterprise's production factors are always in a dynamic change and thus resources surplus will be generated over time. The excess capacity of these resources called "organizational slack" is believed to be the driving force of growth of the firm. Penrose's view has led scholars to pay close attention to the relationship between resources and the growth of firms, and focus on the research of intangible resources and resources characteristics. In early 1980s, the resource-based theory gradually took shape while scholars begun to systematically study the sources of firm's competitive advantages from the perspective of resources.

Different from other theories, the theory of resource competitive advantages is not a theoretical achievement of one scholar through one article, but a collective wisdom by four scholars in ten years. The articles or books contributing to the theory include *The Resource-Based Theory of the Firm* by Wernerfelt, *Strategic Factor Market: Vision, Luck and Corporate strategy* and *Firm Resources and Sustained Competitive Advantage* by Barney as well as *Of Cornerstones and Building Blocks: Then Analytical Foundation of Resource-based Theory* by Peteraf (Liu & Shao, 2014). In his paper *The resource-based view of the firm* published in *Strategic Management Journal* in 1984, Wernerfelt first proposed the concept of Resource-based View (RBV). Based on the Penrose's ideas, he regarded the firm's activities as an activity combining the tangible resources and unique resources for a specific goal. He further argued that it is more meaningful to consider the firm's strategies from the perspective of "resources" instead of "products".

According to Hrebiniak and Joyce (1985), the effectiveness of organizational decisions is a function of the organization resources, decision-making process and external environment. Therefore, it is not enough for enterprises to just adapt to changing external environment. They must break through the constraints of external environmental factors in order to enhance their dominant position. In 1986, Barney proposed a resource-based model elucidating that a firm can achieve competitive advantages through accumulating internal resources and improving capabilities.



According to Barney, it is impossible for a firm to gain the sustained competitive advantage as expected if strategic resources are evenly distributed and highly mobile among competing firms. In 1991, Grant (1991a) first regarded the Resource-based View as a “theory” and discussed the relationship between resources and strategies from the perspectives of corporate-level strategy and business-level strategy. Peteraf (1993) has made contributions in combining the fragmented resource-based theories in relation to competitive advantages together. He first proposed the analysis framework for emergence and continuance of competitive advantages then analyzed its application in the corporate level and business level. Wernerfelt’s (1984) greatest contribution is to guide people to consider the firm’s strategy from a new perspective of resources instead of the established perspective of products. Based on the Penrose’s ideas, he regarded the firm’s activities as an activity combining the tangible resources and unique resources for a specific goal. He believed that it is more meaningful to consider the firm’s strategies from the perspective of “resources” instead of “products”.

The focus of strategy formulation then shifts from the analysis of external industrial structure to the analysis of internal resources and capacities based on the resource-based view. This is a theory that can well explain why a firm can have sustained good performance from the angle of efficiency (Barney & Clark, 2007, Chinese translation: 2011). The core idea behind it is to first assess a firm’s internal resources and capabilities from the perspective of heterogeneity within an industry, then focus on cultivating the unique resources and capabilities that can help an enterprise to gain competitive advantages and promote its long-term development (Wegloop, 1995). Grant (1991a) argued that the firm’s internal resources and capabilities provide the direction for an enterprise’s strategic decisions, thus becoming a main resource of business profits. Although the resource-based theory is still mildly debated among academic circles, there is no denying that it is a collection of original management ideas in the strategic management field over the past decades (Conner, 1991).

The resource-based theory was proposed when scholars in the fields of

economics and strategic management science were focusing on finding the sources that can generate competitive advantages. With the in-depth study of resource-based view, scholars raised new question: what kind of resources can bring sustained competitive advantages to enterprises? Scholars give different answers, with the views of Barney (1991) and Peteraf (1993) being representative. Barney focused on the resources stock and static analysis and argued that the resources that can generate sustained competitive advantages must meet four conditions: a. valuable; b. rare; c. imperfectly imitable; d. non-substitutable. By contrast, Peteraf (1993) emphasized the mobility of resources and dynamic analysis. She believed that four conditions can underlie sustained competitive advantage, all of which must be met. These include superior resources (heterogeneity within an industry), ex post limits to competition, imperfect resource mobility, and ex ante limits to competition.

Some scholars like Collis and Montgomery (1995) argued that the internal analysis of enterprise and the external analysis of industrial environment should be taken into consideration at the same time. In their view, a firm is an entity with a combination of unique resources and capabilities. The resource heterogeneity and ability to use resources are the determinants of firm's success. Before formulating strategies, a firm must make an overall analysis of the industrial environment and competing companies and comprehensively assess whether the firm's resources are sustainable, inimitable, exclusive and non-substitutable. The firm's strategy must be formulated based on the current situation of industrial opportunities and firm's existing resources. Other scholars asserted that the enterprise's strategic priorities should focus on the firm's resources and capabilities: a. what resources are needed for an enterprise's success? What resources can help maintain and strengthen the competitive advantages? b. What resources can be gained or lost after an enterprise has achieved success? c. How should an enterprise deal with external environment with its own resources (Fan, 2015)?

#### **4.5.2 Definition of Strategic Resources**

The enterprise resources are variously defined and interpreted by scholars in the

field of strategic theory. Wernerfelt (1984) defined the enterprise resources as all assets of a firm that can bring advantages or disadvantages. According to Barney (1991), not all resources in an enterprise are useful to the enterprise's strategy. Some resources can negatively affect the formulation and implementation of valuable strategies; some resources can reduce the efficiency of formulation and implementation of strategies; while some resources even have no effect on the enterprise's strategies. Therefore, Barney defined enterprise resources as all assets, capabilities, organizational processes, corporate attributes, information and knowledge in an enterprise that can help the enterprise formulate and implement the strategies in favor of improving business efficiency and profits. From the perspective of traditional strategic analysis, the enterprise resources represent all forces that an enterprise can utilize while formulating and implementing its strategies. According to the traditional classification method, Barney classified enterprise resources into physical capital resource, human capital resource and organizational capital resource. Specifically, the physical capital resource includes material technologies, factory buildings and equipments, geographic location of the enterprise and raw materials; the human capital resource includes the training of management personnel and other staff, experience, judgment, intelligence, interpersonal relationship and insight; the organizational capital resource includes formal reporting structure, formal and informal plans, control and coordination systems, as well as the relationships among groups within the enterprise, and the relationship between the enterprise and the groups in external environment (Liu & Shao, 2014). Scholars in the field of strategic resources have not yet reached a consensus on the definition and classification of enterprise resources as summarized in Table 4-2.

However, the definition of enterprise resources should generally meet the following four conditions:

(1) It should cover all resources that could bring competitive advantages to enterprises;

(2) It should include all resources available in the enterprise. Especially the enterprise should not neglect certain resources that are impossible or difficult to

control (or resources upon which enterprises merely exert influence on). The social resources and external resources, for instance, are also resources accessible to enterprises;

(3) The definition should cover all resources in business activities. Some valuable intangible resources that are produced after investments cannot be ignored;

(4) When the previous three conditions are met, the classification of resources should have different levels. For instance, because the equipments and corporate culture have different characteristics, they may play different roles in obtaining competitive advantages. Therefore, it is advisable to give resources a broader definition (Huang & Cheng, 2005; Barney & Clark, 2007, Chinese translation: 2011).

Table 4-2 Views about Enterprise Resources

Scholars	Views about enterprise's resources	Classification of enterprise's resources
Wernerfelt (1984)	“Anything that can be seen as an advantage or disadvantage to any given enterprise, or put it more formally, the semi-permanent tangible and intangible assets at a given time.” He treats all assets that give enterprises either advantages or disadvantages as corporate resources. (As cited in Yang, 2008)	Wernerfelt divided enterprise resources into three types, namely fixed assets, planning and culture.
Grant (1991b)	Grant defined enterprise resource as inputs in the production process, including capital, equipment, employees' personal skills, brand, finance, etc. Meanwhile, he believes there is a key difference between resources and capabilities. Resource itself has almost no production value. The production activities require the combination and coordination of resources of all kinds. Only when resources are combined will they work. The organizational process and means that combines resources to complete an activity is capability. (As cited in Liu et al., 2011)	Grant puts enterprise resources into six categories: wealth resources, physical resources, human resources, technical resources, reputational resources and organizational resources.
Amit & Shoemaker (1993)	Amit & Shoemaker defined enterprise resource as “enterprise-owned or controlled elements”. They believe that enterprise resources will transform into final products or services by interacting with a wide range of assets and joint mechanisms, including technology, management information systems, incentives, and trust between managers and employees.(As cited in Liu et al., 2011)	Amit and Shoemaker has divided enterprise resources into four categories: tradable proprietary technologies (such as patents and licensing), finance or physical assets (such as property, plant and equipment), and human capital.
Barney (2001)	A firm's resource can be defined as those tangible and intangible assets controlled by a firm that can enable the firm to conceive of and implement strategies. Examples of sources are: plants, products, market reputation, and management team cooperation. (As cited in Liu et al., 2011)	Barney has divided enterprise resources into three categories, namely physical resources, human resources and organizational resources.

Source: the author.

In summary, resources can be defined as anything usable that may bring either advantages or disadvantages to enterprises in the broad sense. In the narrow sense, resources are divided into tangible and intangible. Tangible resources include wealth resources (such as bank deposits, bonds or credits) and physical resources (such as plants, equipment, land and the like) while intangible resources cover knowledge resources, social resources, human resources, technical resources, reputational resources and organizational resources (Yang, 2010; Zhou et al., 2009).

#### **4.5.3 Resources and Sustained Competitive Advantage**

The so-called resource-based theory puts resources at the starting point for strategic decision-making. Enterprise resources connect competitive advantage with decision-making. The resource-based theory (usually referred to as RBT) has very early origins. In 1959, the American economist Edith Penrose, who was one of the first scholars to propose the concept of enterprise resources, contended that a more important form of existence for enterprises is a set of production resources, and the best criterion to review a firm and its scale is the extent to which they control their production resources (Penrose, 1959). Along the 1980s, this thought was established and further developed by Rumelt (1997), Wernerfelt (1984) and Barney (1986) among others. By the end of 1990s, it had become the dominant theory in the strategic management field. For decades, its core ideas have barely changed, namely (i) a firm with sustained competitive advantage always possesses resources and capabilities that enable it to implement valuable strategies that are not easily duplicated by other competing firms, and (ii) heterogeneity can be sustained for a long period of calendar time (as cited in Wang & Shi, 2001).

According to the resource based theory competitive advantage is defined as the ability to create more economic value than the marginal (break-even) competitor in the firm's product market (Barney & Clark, 2007, Chinese translation: 2011).

However, some of the firm's competitive advantages can be temporary. Therefore, to be sustained a competitive advantage must meet two conditions: first, it should help a firm create more economic value than the marginal competitors in the

industry and thus be sustained for a long period of calendar time (Jacobsen, 1988) or it will be competed away through the duplication efforts of other firms; second, the competing firms should not be able to duplicate the benefits of that strategy. In addition, following Baumol et al. (1982), a firm's competition is assumed to include not only all its current competitors, but also potential competitors poised to enter the industry at some future date (as cited in Barney & Clark, 2007, Chinese translation: 2011).

Certainly, not all the firm's resources can be a source of sustained competitive advantage. In 1991, Barney wrote in his work entitled *Firm Resources and Sustained Competitive Advantage* that a firm can grow to a certain extent through obtaining "VRIO" resources or, more specifically, valuable, rare, inimitable and organizational resources meaning the unique ability a firm has to organize and combine its resources (as cited in Barney & Clark, 2007, Chinese translation: 2011).

#### **4.5.3.1 Valuable Resources**

Resources are valuable when they enable a firm to conceive or implement strategies that improve its efficiency and effectiveness. A valuable resource can improve the economic value created by a firm through either increasing customers' willingness to pay or reducing costs, or both (Barney & Clark, 2007, Chinese translation: 2011).

#### **4.5.3.2 Rare Resources**

By definition, resources possessed by large numbers of competing or potentially competing firms cannot be sources of either a competitive advantage or a sustained competitive advantage, even though they may be valuable. It means that if a particular valuable firm resource is possessed by a large number of firms, then each of these firms has the capabilities of exploiting that resource in the same way, thereby implementing a common strategy that gives no single firm a competitive advantage. For instance, managerial talent is a firm resource required in the implementation of almost all strategies. If this particular resource is not rare, then large number of firms will be able to use it to conceive and implement the strategies in question, and it will

not be a source of competitive advantage (as cited in Barney & Clark, 2007, Chinese translation: 2011; Yang, 2007).

#### **4.5.3.3 Imperfectly Imitable (inimitable) Resources**

Firm resources can be imperfectly imitable (or costly to imitate) for one or a combination of three reasons:

(1) The ability of a firm to obtain a resource is dependent upon unique historical conditions as, for example, if a particular firm is the first in an industry to identify and develop an opportunity it can gain a first-mover advantage. Moreover, during the development of things, if early events have a great impact on subsequent events, then the path-dependence effect can accrue to the firm with the competitive advantage from its early actions in acquiring and developing resources;

(2) The links between the resources controlled by a firm and a firm's sustained competitive advantage should be casually ambiguous. When the links between a firm's resources and its sustained competitive advantage are poorly understood, it is difficult for firms that are attempting to duplicate the strategies of a successful firm through imitation of its resources to know which resources it should imitate;

(3) The competitive advantage may be socially complex and even beyond the ability of firms to systematically manage and influence. When competitive advantages are based on such complex social phenomena, the ability of other firms to imitate these resources is significantly constrained (Yang, 2007; Barney & Clark, 2007, Chinese translation: 2011).

#### **4.5.3.4 Resources that can be Exploited and Utilized in the Organizational Process of a Firm**

Only when the valuable, rare and imperfectly imitable resources are utilized in an organized way, can they reach their full potential and generate competitive advantage. A good organization can help a firm make full use of its resources and capabilities and generate competitive advantage based on these resources and capabilities. However, a bad organization will hinder the most effective use of firm's valuable, rare and imperfectly imitable resources and capabilities (Barney & Clark,



2007, Chinese translation: 2011).

## **4.6 Dynamic Capability Theory**

### **4.6.1 Concept of Dynamic Capabilities**

Dynamic capability is a rather new research topic. Existing literature on dynamic capabilities (Teece et al., 1997; Eisenhardt & Martin, 2000; Makadok, 2001; Zollo & Winter, 2002; Adner & Helfat, 2003; Helfat et al., 2007) attempts to explain how enterprises make innovations to their existing capabilities and resources so as to adapt to the ever-changing business environment.

So far there has been no consensus on the dynamic capability theory (Arend & Bromiley, 2009; Prieto et al., 2009), leading to various versions of its definition (Teece et al., 1997; Eisenhardt & Martin, 2000; Winter, 2003; Zahra et al., 2006; Wang & Ahmed, 2007; Døving & Gooderham, 2008; Barreto, 2010).

Some consensus has been aligned around the notion that dynamic capabilities refer to “the company’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments”, and it is a constantly-updated core corporate capability for the company to stay competitive (Wang & Ahmed, 2007). Capabilities are considered to be the habit and process of a company. Therefore, dynamic capabilities are defined as capabilities that can endow businesses with competitive edges in an ever-changing environment (Cardeal & António, 2012, Chinese version).

Contrary to the resource-based theory, it is believed in the dynamic capability theory that competitive advantage is based on the environment. Capabilities, rather than resources, are emphasized because in the dynamic market environment the value of resources is subject to rapid devaluation (Collins & Montgomery, 2008).

While resources are still very important, its importance is based on the resource allocation of dynamic capabilities (Cavusgil et al., 2007; Liao et al., 2009; Morgan et al., 2009; Prieto et al., 2009). Enterprises integrate resources and internal knowledge

to find a solution to achieve strategic and operational objectives. The optimal way for integration and interaction of these resources is closely related to the concept of dynamic capability (Kay, 2010).

Resource occupation and possession of pragmatic resources are equally important, and possession of capability makes it possible for the integration and utilization of resources (Barney & Wright, 1998; Newbert, 2008). Therefore, capability can be seen as the “organization” perspective in “VRIO” (Cardeal & António, 2012, Chinese version).

#### **4.6.2 Dynamic Capability Theory and Resource-based Theory**

The resource-based theory focuses on special resources and stresses that competitive advantage is based on the valuable, rare and inimitable resources and organizational reconfiguration (VRIO) (Barney, 1997). It is believed in the resource-based theory that in order to gain competitive advantage, enterprises must have VRIO resources.

Dynamic capability is “the company’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments”, and it is a constantly updated core corporate capability for the company to stay competitive (Wang & Ahmed, 2007). Capabilities are considered to be the habit and process of a company. It is believed in the dynamic capability theory that competitive advantage capability originates from VRI, with organizational reconfiguration being a capability itself and the focus of theoretical analysis.

The dynamic capability view explores how enterprise resources and capabilities develop with the passage of time and explains how competitive advantages are formed and kept (Ambrosini & Bowman, 2009).

According to the resource-based theory, dynamic capabilities can be seen as the O in VRIO. As a dynamic capability, the O (organizational reconfiguration) can lead to competitive advantage only when enterprises have VRI (Cardeal & António, 2012, Chinese version).

#### **4.6.2.1 Value**

Enterprise resources will create value if they can take advantage of opportunities and/or eliminate threats (Barney, 1991). Amit and Schoemaker (1993) argue that enterprises must have sufficient capability to take advantage of their resources. In other words, while a resource may have the potential to create valuable services, if the enterprise does not have the capability to deploy these services, the value of the services cannot be displayed (Newbert, 2008). This is consistent with other definitions of resources. Resources are valuable when they can manufacture products desired by customers with an acceptable price (Collis & Montgomery, 1995). Valuable resources enable enterprises to do things that can bring about economic value (Fiol, 1991). To make the concept of valuable resources operable, Bowman and Ambrosini (2007) define resource in a broad sense, including both functions and capabilities. Therefore, resources by themselves are not valuable (resources are an enabler for the development of opportunities, and/or an inhibitor for threats and negative effects) (Cardeal & António, 2012, Chinese version).

#### **4.6.2.2 Rarity**

If most competitors have the same valuable resources, and explore them in the same way the same strategy will be implemented to create the same value. As a result, no enterprise can obtain competitive advantage through those resources because of their lack of rarity (Barney & Zajac, 1994).

#### **4.6.2.3 Inimitability**

If valuable and rare resources can easily be imitated, competitors will soon imitate them and the potential of competitive advantage will disappear. Resources are inimitable for the following five reasons: a. they have path dependence (Dierickx & Cool, 1989; Vergne & Durand, 2011); b. the relationship between resources that can improve competitive advantage is vague (Dierickx & Cool, 1989; Reed & DeFillipi, 1990; Barney, 1995); c. they are complex at the social level and enterprises are unable to systematically manage and control the resources (Barney, 1991); d. they have legal

property rights such as patent rights (Wills-Johnson, 2008); e. the process of their being imitated is long (Wills-Johnson, 2008).

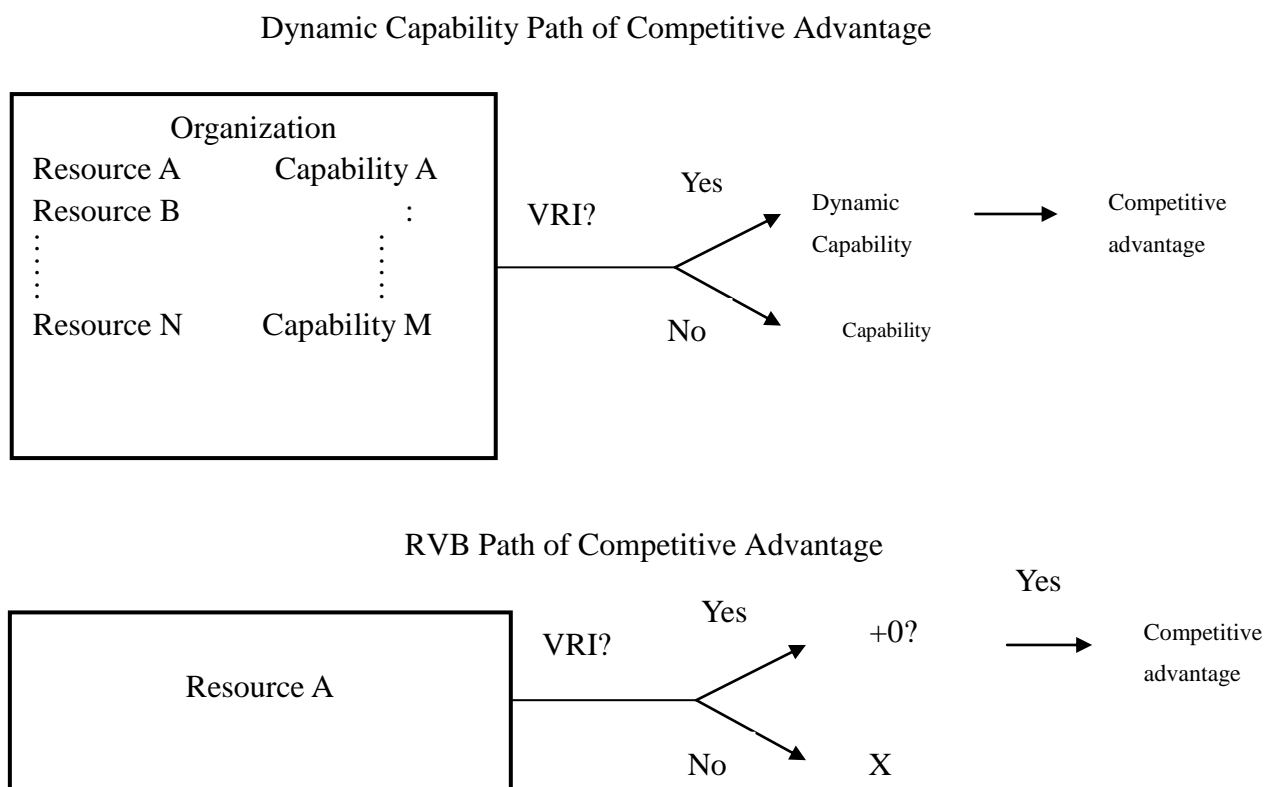
#### **4.6.2.4 Organizational Reconfiguration**

Capabilities are described as incremental, renewable, and reproducible (Ambrosini & Bowman, 2009), or as a collection of operational capabilities (Laamanen & Wallin, 2009), and may be classified as static or core (Wang & Ahmed, 2007).

They are organizational processes (skills, experts, knowledge and management), which can be exploited by businesses to explore corporate resources and lower-level capabilities in daily operation. They are an intermediate product between resources and lower-level capabilities (input) as well as resources and end products (output). Dynamic capabilities are defined as capabilities that can endow businesses with competitive edges in an ever-changing environment. As mentioned above, both capabilities and dynamic capabilities are the O in the VRIO acronym (Cardeal & António, 2012, Chinese version). Enterprises that have developed a better way to integrate enterprise resources have more competitive advantages.

To sum up, based on the resource-based theory, to achieve competitive advantage, enterprises need resources, and based on the dynamic capability theory, competitive advantage comes from VRI. So the analytical unit should be organizational reconfiguration which is in it a capability (Cardeal & António, 2012, Chinese version).

Figure 4-7 Competitive Advantage of RVB/Dynamic Capability Path Orientation



Source: Cardeal & António (2012, Chinese version)

### 4.6.3 VRIO business analysis framework

If a particular resource or capability is valueless, it will put an enterprise at competitive disadvantage and thus compromise its performance. These kinds of resources are identified as weaknesses in SWOT analysis and the enterprises should try to avoid using them while formulating and implementing strategies.

A particular resource that is valuable but not rare will enable a firm to conceive of or implement strategies that can generate competitive advantages and achieve average performance. These kinds of resources, identified as strengths in SWOT analysis, should be fully utilized. Although using them cannot help a firm achieve above average performance, not using them will put the firm at a disadvantage in competition.

In practical application, only the first three questions are asked, namely, is a particular resource or capability valuable? Is it rare? Is it costly to imitate? The question of organization is only considered as an influencing factor.

Table 4-3 VRIO analysis framework

A particular resource or capability						
Valuable?	Rare?	Costly to imitate?	Exploited by the organization?	Strength or weakness	Competitive implication	Economic performance
No	—	—	No	Weakness	Competitive disadvantage	Below average
Yes	No	—	↓	Strength	Competitive balance	Average
Yes	Yes	No		Strength	Temporary competitive advantage	Temporary above average
Yes	Yes	Yes		Strength	Sustained competitive advantage	Above average
				Yes		

Source: Xing & Zhang (2012)

#### 4.6.4 Capability and Sustainable Competitive Advantage

With the passage of time, enterprises have the opportunity to improve their organizational processes or everyday routines. If these are difficult to be imitated by competitors, the potential competitive advantage of the enterprise will be increased (Teece et al., 1997).

Most components of a firm are related to its organizational capabilities, which include formal reporting structure, formal and informal management control system and compensation policies (Barney & Hesterly, 2009, Chinese translation: 2010). For example, formal reporting structures are simply a description of who in the firm reports to whom; formal and informal management system include budget system and a firm's culture; compensation policies are the means by which a firm pays salaries and motivates employees. These components alone do not provide much value. However, in combination with a firm's other resources and capabilities, it can result in sustained competitive advantage (Huang et al., 2009; Yang, 2007). In recent years,

there has been particular focus on how corporate culture, human resources and information technology influence continuous corporate competitive advantage as corporate organizational capabilities. This will be discussed as follows:

(1) Organizational capabilities: firm's culture and sustained competitive advantage

Firms with strong cultures are pointed out as examples of excellent management. According to Barney & Clark (2007, Chinese translation: 2011), organizational culture is typically defined as a complex set of values, beliefs, assumptions, and symbols that define the way in which a firm conducts its business. In this sense, culture has a pervasive effect on a firm. But a firm's culture, in order to be the source of sustained competitive advantages, must be valuable, rare and imperfectly imitable. Such a firm will enjoy the positive economic consequences of its culture.

(2) Organizational capabilities: human resources and sustainable competitive advantage

Enterprise human resources refer to the collection of knowledge, experience, skills and loyalty, as well as the internal and external relations of all employees (Lado & Wilson, 1994; Wright et al., 2001). Through directly controlling or strongly influencing the features of human resources (human capital's skills, employees' loyalty, organizational culture, team spirit), human resources department will play a significant role in developing and maintaining the competitive advantages of an organization (Barney & Clark, 2007, Chinese translation: 2011).

(3) Organizational capabilities: information technology and sustained competitive advantage

IT may increase a firm's economic value by reducing business costs and providing differentiated products or services (Barney & Clark, 2007, Chinese translation: 2011). The resource-based view sustains that IT management skills may be a source of sustainable competitive advantage because they are often heterogeneous and reflect the unique history of a firm as part of its daily routines.

#### **4.7 Guiding Significance of Resource-based Theory in this Study**

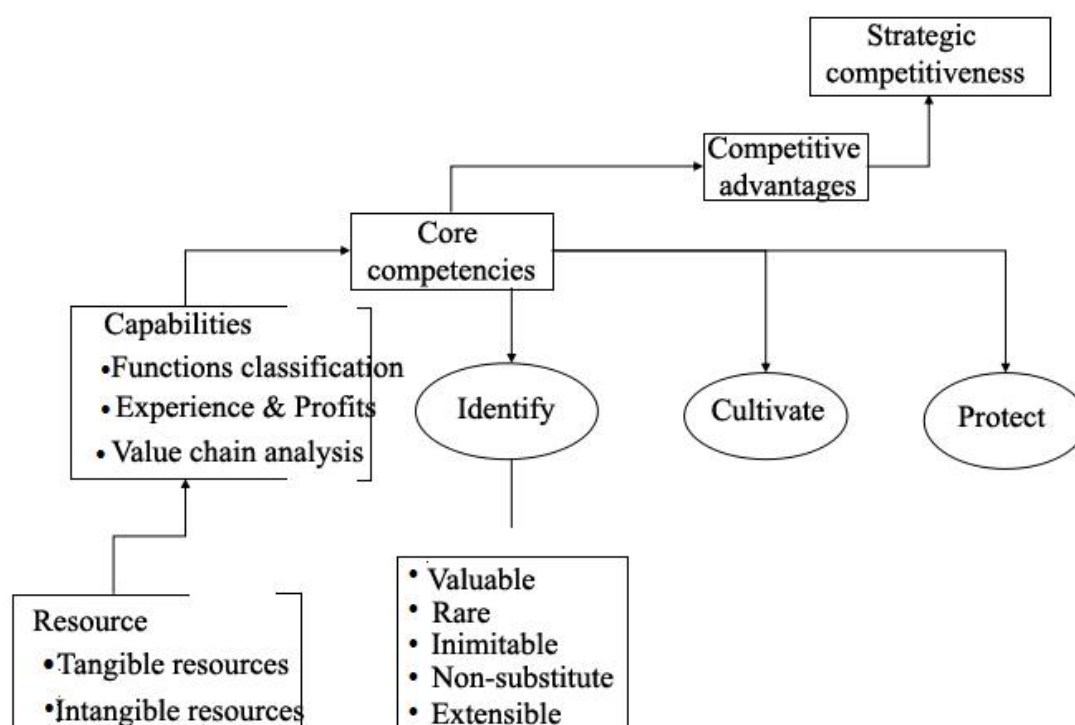
According to the resource-based theory, in order to win competitive advantage, enterprises need VRIO resources. The ultimate capability to win competitive advantage is VRI. Dynamic capability can be seen as O (organizational resources) in VRIO. In order to win competitive advantage, the organization must have VRI (valuable resources, rare resources and inimitable resources) and then use O (Organizational reconfiguration) as a dynamic capability (Cardeal & António, 2012, Chinese version). See details in Figure 4-8 for the conversion between resources and capabilities into competitive advantages.

The “resource-based theory” is significantly instructive to this study, which regards resources as the important unit of analysis of an organization, helping the organization to identify its sources of sustained competitive advantages. The resource-based theory mainly answers the question: what are enterprises and what are the long-term competitive advantages of enterprises? Namely, the four practical questions: first, what are the assets and capacities critical to the industry? After surviving the competition, what resources will enterprises gain and lose? Second, what resources are needed for enterprises to maintain their competitive advantage? Given the combination of resources, what resources are worth developing, strengthening and maintaining? Third, what are the ways to gain or create the resources needed to maintain competitive advantage? Fourth, faced with the unique resources of competitors, how should enterprises respond? These questions will help enterprises identify competitive, market-related and lasting key resources and the maintenance and development of these resources depend on the strategic target of the given enterprise. Therefore, enterprises shall constantly accumulate and build core resources to distinguish themselves from their competitors. The ownership, establishment and access to unique resources no longer rely entirely on self-sufficiency from within. The resource dependence and allocation theory show that one can get access to the resources of another through cooperation and alliances,



which is an important means to access external resources (Cao, 2011; Lin et al., 2010; Mao et al., 2000). This study analyzes the reasons why the First People’s Hospital of Hefei City is established and how it develops regarding the social environment and internal drivers, or the external and internal resources accessible to the hospital and its capabilities.

Figure 4-8 Conversion from resources and capabilities into competitive advantages



Source: Gong (2008)

#### 4.8 Differences and relationships between competitive strategy theory and resource-based theory

The strategic management research has gradually shifted focus from the industrial determinants of competitive advantages such as industrial positioning and industrial structure to sources of competitive advantages in an enterprise, like enterprise’s resources and capabilities and core competencies. The competitive strategy theory and RBV have been widely used in the strategic management research

and application. Because RBV is particularly insightful in explaining the sources of competitive advantages such as enterprise resources and capabilities (Yeoh & Roth, 1999), it has rapidly become one of dominant theories in strategic management field in 1990s (Collis & Montgomery, 1995).

In early 1980s, the competitive strategy theory developed by Michael Porter at Harvard Business School dominated the strategic management field. In Porter's view, the core of corporate strategy is to gain competitive advantages, which are determined by two factors: first, the profitability of the industry in which an enterprise operates (industry attractiveness); second, enterprise's competitive position relative to its rivals. Therefore, the choice of competitive strategies should be made based on the following two considerations: first, select an attractive industry potentially having high profitability. The attractiveness and continued profitability of different industries vary considerably. A sunrise industry is more likely to bring profits to an enterprise than a sunset industry; second, assess the competitive position in the industry in which an enterprise determines to compete. No matter how attractive and profitable an industry is, the firms with competitive advantages are more likely to earn profits than the inferior ones. In order to correctly select an attractive industry and accurately assess the competitive position, an enterprise must make a comparative analysis of several industries it intends to enter regarding their industrial structure conditions and competitive environment.

In a nutshell, the Porter's competitive strategy theory can be summarized as: a. the industry structure is the key factor of corporate profitability; b. through adopting either lower cost or differentiation strategy, a firm can cope with the five forces better than its rivals to obtain a competitive advantage; c. activities of value chain are sources of competitive advantages. By aligning the various activities (processes or collections of processes) in its value chain with the enterprise's basic strategy in a coherent way, a firm can achieve a competitive advantage. Porter's industry structure analysis theory is widely recognized by the scholars in the field of enterprise strategic management, and has become the most important and widely used model for external environment analysis and strategic choice. But there is a lot debate about whether his

theory can really work in a practical context due to its ideal assumptions. Currently, it is generally accepted as more of a theoretical tool than a practical strategic tool (Xing & Zhang, 2012).

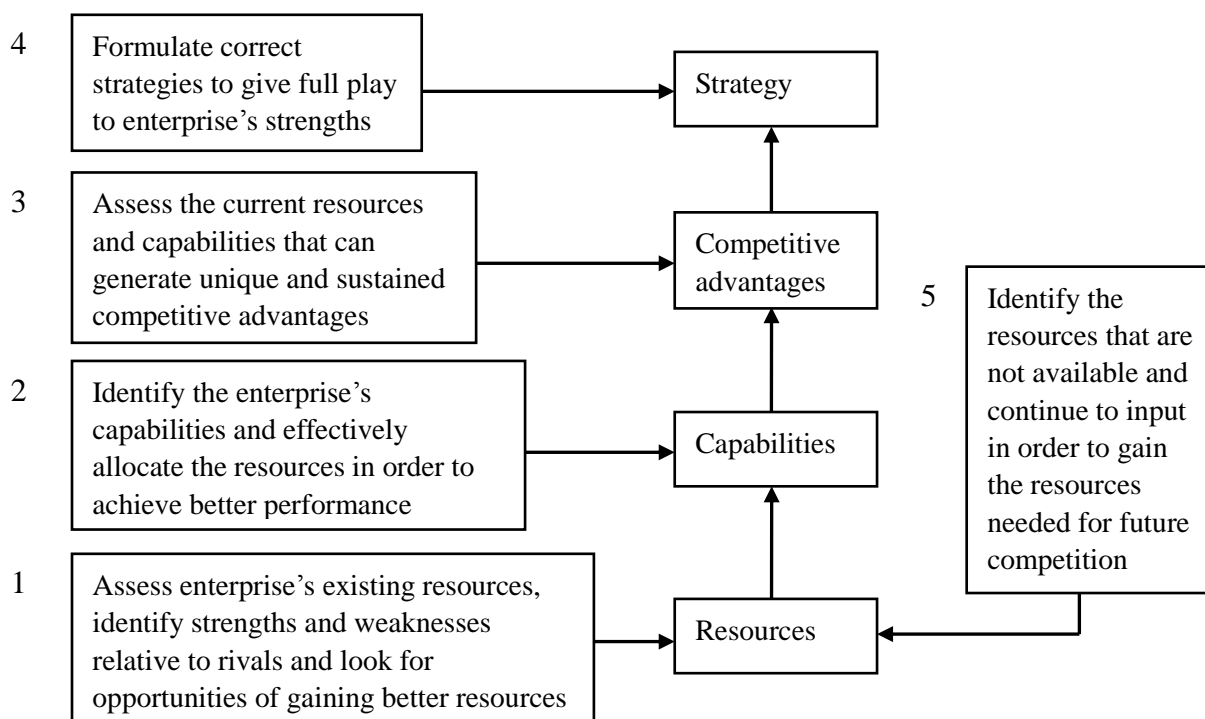
Some literature suggests that the resources, dynamic capabilities and knowledge are closely interrelated. For example, according to Wright, Dunford and Snell, the interrelation between these three factors remains central to strategic management and human resources management. By taking the interrelation between these three factors and sustained competitive advantages into consideration at the same time, Fiol (1991) concluded that it is impossible to maintain sustained competitive advantages under certain circumstances. Many papers focus on studying the dynamic capabilities, contending they are always utilized by enterprises to change their resource conditions, thus can be considered as a source of competitive advantage. As extensive literature has concluded, an enterprise can maintain competitive advantages in a dynamic market, but it is impossible for this enterprise to gain sustained competitive advantages just because it has dynamic capabilities. Some literature even suggests the idea of competitive advantages based on dynamic capabilities contradict with the resource-based view. But Barney insisted that the RBV can not only be applied to stable markets, resources and capabilities, but to fast-changing markets. “Dynamic capabilities” is just a paraphrase of “The capabilities are dynamic”. Therefore, the view of dynamic capabilities is actually consistent with the traditional resource-based view (Liu & Shao, 2014).

In the 1980s and 1990’s Porter published extensively on industrial structure and enterprise’s competitive position stating that they are the source of competitive advantages. He established highly influential analysis tools such as “five forces model”, “value chain model” and “diamond model”. However, Porter focuses more on external (industrial) environment (Opportunity (O) and Threat (T) in the SWOT analysis framework) rather than on the enterprise internal resources (identified as strengths (S) and Weakness (W) in the SWOT. In the end, where do competitive advantages come from?

In strategy research, enterprises should be considered as heterogeneous entities

because each enterprise has its unique resources and capabilities (Foss, 1996). Therefore, it is necessary to analyze the strengths and weaknesses of an enterprise from the perspective of internal resources and capabilities in order to explore the sources of competitive advantage, which is the focus of RBV. Into the 1990s, RBV has gradually become a dominant theory in parallel with Porter's industry structure analysis framework in strategic management field. As a theory used to explore the sources of sustained competitive advantages, RBV ascribes the organization's performance differences to the business efficiency instead of market forces, collusion or strategic action. RBV believes that the competitive advantages derive from the rarity of resources and effective utilization of resources and the performance differences result from the efficiency difference of internal resources. Meanwhile, RBV explains different performance of competing firms from the perspective of internal resources and capabilities instead of the industry structure (Porter, 1980), cluster analysis (Dranove et al., 1998) or bilateral analysis (Young et al., 1997). The RBV's logical map is depicted in Figure 4-9.

Figure 4-9 Corporate strategic management process based on RBV



Source: Duan et al. (2006)

## 4.9 Chapter Summary

This chapter mainly reviews the theoretical literature that lays the theoretical foundation for the case study in Chapter four, five and six. It first takes a look back at the strategic management theory and elaborates the main ideas of strategic management theories in chronological order. The application of strategic ideas and theories to business management is the adjustment enterprises make to the environmental changes in the future through formulating overall and far-reaching plans in an attempt to seek long-term survival and stable development. Meanwhile, this chapter puts emphasis on strategic alliances, a popular and emerging theory since the 1990s. The research on strategic management theories has important implications for this study to select and adopt consolidation development strategy, complement each other, reduce business risks and enhance organizations' strengths.

The second part describes key theories in the field of strategic management: the resource-based view, the dynamic capability theory, and their impact on the sustainable competition of organizations. The resource-based theory puts resources at the starting point for strategic decision-making. For organizations, resources connect competitive advantages with decision-making (Yang, 2010). Its essence is to explore the unique resources and extraordinary capabilities of organizations, in a bid to enhance competitive advantages. The reason for sustained competitive advantage is the heterogeneous and immobile resources within organizations, some of which are valuable, scarce, inimitable and can be developed, utilized and rendered uniquely by the organizational processes of a firm (Wu & Wu, 2008). Dynamic capability is a newer research topic according to which competitive advantage is based on the environment of dynamic capabilities. It emphasizes capabilities rather than resources, because in the dynamic market environment the value of resources is subject to rapid devaluation. Organizational capability "the company's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" is a constantly updated core corporate capability for the company to

stay competitive. Capabilities are considered to be the habits and processes of a company (Ma & Wang, 2013).

In this thesis, the social environment and internal motivation factors of the First People's Hospital of Hefei City, namely the hospital's internal and external resources and its capabilities will be analysed and the establishment and development of the hospital group will be explained.

## **Chapter 5 - Current situation of the First People's Hospital of Hefei City and Analysis of Internal and External Environment**

In this chapter, the basic situation of the First People's Hospital of Hefei City and its development process from infancy to maturity and from a loose to a closely-knit type of consolidation over the past ten years between 2004 and 2015, are described based on the documents, development plans, internal materials, official data, direct observations and interviews. Then the SWOT analysis is used to answer the previous question of what drives the establishment of the hospital group. Meanwhile, the reasons for the hospital to take the path of consolidation according to the social environment at that time, internal drivers and resources accessible to the hospital are also analyzed. Finally, conclusions are drawn regarding the strategic decisions of the consolidation and its further development.

### **5.1 The Basic Situation and Development of the First People's Hospital of Hefei City**

Founded in 1954, the First People's Hospital of Hefei City, the capital of Anhui province, was rated Grade III Class A hospital by the Ministry of Health of the PRC in 1997. In 2004, it became the first medical group in Anhui Province and in 2006 was approved by the Anhui provincial government as the Third Affiliated Hospital to Anhui Medical University. The map below illustrates the location of Hefei city.

Figure 5-1 Geographic Location of Hefei City



Source: the author.

Covering an area of 240,000 square meters, the hospital occupies 400,000 square meters of medical building area, with 4,500 planning beds, 3,893 beds in use, and nearly 4-billion-yuan (about 557 million Euros) worth of assets in 2015. There are 3,413 employees in the group, with nearly 300 associate chief physicians and 304 attending doctors. Among all these employees, there are about 50 persons with doctor's degree, 600 persons with master's degree, 88 part-time professors and associate professors from Anhui Medical University, one part-time doctoral supervisor and 33 master supervisors and 19 master programs have been set up. Also, there is one person enjoying special allowance from the provincial government, six top talents of Hefei City and one nationally known veteran doctor in Traditional Chinese Medicine (TCM).

The annual volume of emergency and outpatient visits is 2.15 million persons while the annual volume of hospitalized patients is 125,000 persons, and the annual number of surgeries is 37,000 according to the 2015 annual report of the First



People's Hospital of Hefei City (Annual report of the First People's Hospital of Hefei City, 2015).

In 2004, approved by the municipal government of Hefei City, the First People's Hospital of Hefei City was upgraded to a hospital group. The hospital group has witnessed full development guided by the idea of "consolidated development, compact management, integrated combination and execution" as well as "big hospital, big group, big thinking and big development". The hospital group includes two Grade III Class A hospitals (the First People's Hospital of Hefei City and Hefei City Binhu Hospital), an extended branch of a Grade III Class A hospital (the West District of the First People's Hospital of Hefei City), three specialized branch hospitals (Luyang Rehabilitation Branch Hospital, Medical Cosmetology Branch Hospital and Shushan Acute and Severe Diseases Branch Hospital of Hefei City), three outpatient departments (Hupo Community Clinic, Taihu Road Clinic, Government Affairs Center Clinic), and three physical examination centers (Physical Examination Station of Hefei City, Physical Examination and Health Care Center of Hefei City, and Health Management Center of the First People's Hospital of Hefei City).

The group now has 45 clinical subjects and 18 medical technology subjects. Among these subjects, Nursing Science is considered to be a national key subject by the National Ministry of Health of the PRC. The Respiratory, Laboratory, Radiology, Clinical Pharmacy and Geriatrics are rated as key disciplines by Anhui Province. Proctology Section is rated as the provincial Traditional Chinese Medicine (TCM) key specialized department of Anhui Province. Eleven disciplines including Surgery, Orthopedics and Pharmacy are rated as key disciplines of Hefei City. In 2012, the hospital was awarded the title of Academician Workstation in the provincial medical system by the Anhui provincial government. The hospital group is the first hospital with four-level clinical subjects in Anhui province. Currently, the group has 45 clinical subjects and 18 medical technology subjects (The First People's Hospital group of Hefei city on the official website, 2017).

The hospital has a host of advantageous technological programs such as heart-lung transplantation, allergenic liver transplantation, coronary artery bypass

grafting with beating hearts, cure of Tourette syndrome by stereotactic nucleus derogation and orthodontics. The autologous and allogeneic stem cell transplantation and use of CIK cells to cure malignant tumor are top-notch in Anhui Province.

In particular, the First People's Hospital of Hefei City is a third class A level hospital. According to the current hospital classification management method in China, hospitals are divided into three grades and six levels, namely primary, secondary and Grade III hospitals, with Grade III hospitals being the highest grade. Grade III hospitals provide inter-regional, inter-provincial or national medical and health services to the general public and they are also medical prevention technology centers with comprehensive medical treatments, as well as teaching and scientific research abilities. Their main functions are to provide specialist medical services, deal with critical and complicated diseases, receive referrals from secondary hospitals, offer technical guidance to and train talents for primary and secondary hospitals, offer teaching programs to nurture various kinds of senior medical professionals and undertake provincial or national research projects. Grade III hospitals (with more than 501 beds) are hospitals that provide high-level specialized health services to several regions as well as undertake higher education and scientific research tasks. Grade III Class A hospital (or simply called "3A hospital") represents a medical institution level classified and evaluated in accordance with China's current Measures for the Hospital Classification Management. The main evaluation items include medical service and management, medical quality and safety, and technical level and efficiency. Based on a 1000-score evaluation system – a score rated by expert panels from the National Health and Family Planning Commission or provincial health and family planning commissions who visit the hospital and give the score on the spot- the hospitals whose score is above 900 are rated as Grade III Class A level; the hospitals scoring between 750 and 900 are rated as Grade III Class B level; while those scoring between 600 and 750 are rated as Grade III Class C level (National Health and Family Planning Commission of the People's Republic of China, 2011). The Grade III Class A hospital is the highest level among Grade III hospitals, or more specifically the highest level in China's "three grades and six levels" hospital classification system (National Health

and Family Planning Commission of the People's Republic of China, 2011).

## **5.2 External Environment of the Establishment of the Hospital Group**

In China, establishing hospital groups is one of the important initiatives in the medical system reform that has received great support from local governments since it is considered an effective way to optimize resources, reduce costs and improve efficiency in the tense medical market competition.

### **5.2.1 Establishing Hospital Groups as an Important Initiative of Public Hospitals for Further Reform**

The establishment of four major systems in China's healthcare reform covers the following areas:

(1) Public health – it covers the establishment and improvement of professional public health service networks, which include diseases prevention and control, health education, maternity and child care, mental health, emergency treatment, blood collection and supply, hygiene supervision and family planning. The purpose is to improve the public health service functions of the basic health care service system, which is based on the grass-roots health care service network.

(2) Medical service – a rationally structured health care service system covering urban and rural residents should be established by adhering to the operational principle of taking non-profit health care institutions as the main body, for-profit health care institutions as the supplement, with the state-owned institutions playing a leading role, while non-state-owned health care institutions should aim to contribute with synergies in the development.

(3) Medical insurance – efforts should be made to quicken the construction and improvement of the multi-layer medical security system covering urban and rural residents, with the basic medical security as the main body, and other diversified

supplemental medical insurance and commercial health insurance as the supplement.

(4) Drug supply – efforts should be made to accelerate the establishment of a secured pharmaceutical supply system on the basis of the national essential medicines system, and ensure medicine safety for the whole people.

In recent years, conflicts between patients and doctors have mostly been in public hospitals, therefore, public hospital reform is crucial to solving problems in the new healthcare reform. Among the 16 cities that were designated to carry out pilot public hospital reforms in 2010, nearly half of them have proposed to build hospital groups, believing that building large hospital groups might be a way to enhance public hospitals' ability to provide quality service and integrate medical resources. In addition, it is believed that public hospital consolidation would help to achieve separation of administration and management from medical services allowing these to diversify, as well as ensure sufficient quality medical resources at the grass-roots level. Both these measures reflect a new trend of the government's guidance, which is to establish and improve the linkage and two-way referral system between large-sized hospitals and grass-roots level hospitals through integration of medical resources, so as to achieve a reasonable distribution of high-quality resources.

In China, with the introduction of a series of supporting policies in the process of healthcare reform, the establishment of hospital groups has become a market economy behavior encouraged by the government. In 2000, the Chinese government clearly stated to “encourage medical institutions of all types to cooperate and merge to co-build medical service groups” (the General Office of the State Council of the PRC, 2000). Consolidation of medical institutions has become a specific approach to further public hospital reform, and is also a trend of the development of medical and healthcare services. To a certain extent, hospital groups may be an important tool for the government to optimize the layout of public hospitals, balance the allocation of high-quality medical resources, enhance vitality of public hospitals, as well as an important strategy to build a new urban medical service system.

### **5.2.2 Demands for Integration of Medical Resources**

In China, with the development of the market economy, reform of medical insurance system, and the rise of people's living standards, competition in the medical market has become fiercer and the economic benefits of hospitals are significantly different. Some hospitals operate in an overloaded manner, and even some others have nearly lost the medical market. In this case, hospitals without market are eager to find a way out, while those overloaded hospitals need to transfer patients to other hospitals. Such imbalance promotes the surge of hospital groups as an inevitable product of market economy.

In fact, the distribution of Chinese hospitals and medical resources is severely imbalanced. Hospitals with technical and economic strength are mainly located in developed provinces and large and medium cities, and most of them are affiliated to the Ministry of Health, provincial or municipal health department or medical schools. However, the inadequacy of medical resources is still a problem faced by most rural areas or remote regions where patients are unable to get high level health services. In some areas, there is even a shortage of doctors and medicines (Sun, 2003).

The main reason for the implementation of consolidated management of hospitals is to carry out mergers and acquisitions and optimize the mix through administrative and economic means, so that the medical technology in developed areas and health resources in hospitals with leading technology can play a greater efficiency and the problems of uneven distribution and low utilization rate of health resources can be partly resolved.

The establishment of hospital groups can also help to share advanced equipment and technology, standardize the services, reduce the information missing in patient referral, and decrease the procurement costs by scale purchasing in order to control the costs, so as to win a competitive edge in the medical market (Li & Wei, 2009).

### **5.2.3 Experience of Foreign Hospital Groups**

Foreign hospital groups usually strengthen the independent legal status and introduce the organizational structure and management style of private enterprises while maintaining the ownership nature of public hospitals. The state-owned and privately run medical organizations can establish perfect and effective hospital governance structure and get public hospitals to the market. Thus, the public hospitals have to constantly improve themselves in order to survive in the fierce market competition. With the development of hospital group, the personnel, medical technologies and logistics services will be socialized. The group members, highly complementary to each other, should give full play to their own advantages and distinctive specialty so that the various kinds of medical resources can be effectively and fully utilized. Besides, the members of medical group become more diversified and even the insurance companies also join the group.

It is advised to define the boundaries of rights and interests of the government and public hospitals since they are an extension of the Chinese government's social welfare functions. The significance of their existence lies in their social functions, which is to ensure that the general public have access to basic healthcare, improve the fairness and accessibility of medical services, offer treatment to every citizen in need, and correct market failures. Public hospitals bear some of the government's functions, but the market-oriented nature of the healthcare reform makes the self-financed public hospitals more profit-driven while gradually ignoring their social responsibility (Zhou, 2012).

As a result, consolidation may help achieve reasonable allocation of healthcare resources and improve utilization of efficiency of health care resources. This move has won recognition from the government, hospital, medical staff and patients and became an effective measure of public hospital reform.

#### **5.2.4 Hospital groups as an opportunity in the healthcare reform**

With the gradual integration of China with the world, as well as China's accession to the WTO, decision makers in large-sized public hospitals, in order to make hospitals "bigger and stronger", spontaneously worked with each other to form closely or loosely-knit hospital groups. There have been several cases of hospital groups since then. In 2000, the State Council of the PRC issued the *Guiding Opinions on Urban Medical and Health Care Reform*, in which all types of medical institutions were encouraged to cooperate and merge with each other to co-build medical service groups. The government was explicitly affirmative on the consolidation of hospitals. However, there is no unified mode of hospital consolidation, so the room for exploration and development is unlimited.

#### **5.2.5 The local government attaches great importance to consolidation reform**

The establishment of the First People's Hospital Group of Hefei City was considered a major event in the public health circle of Hefei City. The local health department and the municipal government of Hefei City attached great importance to the new hospital group with the mayor and vice mayor in charge of public health as well as the heads of health departments at all levels having participated in the opening ceremony, showing recognition and support to its establishment. As a result, the First People's Hospital of Hefei City won a relatively favorable environment for its development, consolidation, trans-regional reorganization and integration of resources, avoiding barriers of policies and administrative constraints.

### **5.3 Analysis of Internal Environment of the First People's Hospital of Hefei City**

Through interviews with hospital leaders and heads of departments and direct observation, the reasons for the establishment of hospital groups are analyzed. For

example, the severe shortage of medical resources, poor medical environment, high operating costs, and fierce market competition are the most obvious factors that motivated the First People's Hospital of Hefei City, now the core hospital of the group, to take the lead to establish a hospital group.

### **5.3.1 Lack of All Types of Medical Resources**

As mentioned in the first section of this chapter, the First People's Hospital of Hefei City is located in the downtown area of Hefei City. From 1954 when the hospital was established to the end of 2003, it covered only an area of 32 mu (21,330 square meters), with 46,000 square meters of medical construction area and 675 beds. However, the highest daily outpatient visits had reached more than 2,500 persons, and the number of daily hospitalized patients had reached 1,000 persons. Nearly all outpatient and clinical departments are running under high load all the year around. The hospital faced severe problems of limited medical treatment space, extremely shortage of land resources and deficiency of hospital beds. Take the new surgery building which was put into use in 2003 for example, every department added more than 10 extra beds, sometimes even nearly 20 beds, on average every day. Many patients had to sleep in corridors temporarily, which not only influenced the overall image of departments, but also brought inconveniences to patients, because their privacy cannot be protected and sometimes patients may be unable to get hospitalized even if they are sick. Therefore, shortage of medical buildings and lands has severely affected the general public to get treatment, and posed a severe test to the further development of the hospital.

### **5.3.2 Heavy Burden Left by History**

The First People's Hospital of Hefei City, the subject of this study, is an established hospital with a history of 50 years. The long history not only endows it with excellent hospital culture (see details in Chapter 6), but also leaves it a heavy burden. For example, there are many non-medical staff such as logistics and



administrative staff in the hospital and the problem of labor costs is quite prominent (see details in Chapter 6). With the rapid development of the First People's Hospital of Hefei City, these problems have become more acute.

### **5.3.3 Fierce Competition in the Medical Market**

Limited by the geography, leaders in the healthcare industry are often leaders in a certain local area, and patients' need of getting treatment conveniently decides the range of services for the hospital. Located in the capital of Anhui Province, the First People's Hospital of Hefei City as a municipal hospital has to compete with not only provincial-level hospitals such as the First Affiliated Hospital to Anhui Medical University and Anhui Provincial Hospital (all of which are located in the Hefei City, Anhui Province), but also with seven other municipal hospitals as well as specialized hospitals and private hospitals, so the hospital is facing an increasingly fierce competition in the medical market.

## **5.4 Analysis of the resources and capabilities of the First People's Hospital Group of Hefei City**

Apart from the internal and external drivers, some resource advantages of the First People's Hospital of Hefei City also contributed to the establishment of the hospital group. Just to name a few, first, as mentioned in the policies of medical system reform, the establishment of hospital groups is encouraged by the Chinese government; second, the establishment of hospital groups has received great support from the local government of Hefei City; third, the consolidation experience of foreign hospital groups can provide useful reference; lastly, as a leading hospital in the region, the First People's Hospital of Hefei City is strong enough to establish hospital groups.

### **5.4.1 Analysis of Resources of the First People's Hospital of Hefei City**

#### **(1) Tangible resources**

The hospital is equipped with Discovery CT 750, 16-slices helical CT, large C Arm, small C arm, MRI, DSA, CR, DR, UCG, abdominal Doppler ultrasound, automated biochemical analyzer, microorganism culture and identification system, hematology analyzer, osteoporosis treatment device, holmium laser, and Excimer laser grinding system.

#### **(2) Intangible resources**

With 90 medico-technical departments, the hospital enjoys distinctive characteristics and significant advantage in organ transplantation, severed finger reunion, joint replacement, endoscopic operation, and the technology used in these operations has been at the leading level domestically.

Adhering to the principle of “rejuvenate the hospital through science and education”, the hospital group has currently made remarkable technological achievements, including nine projects of National Natural Science Foundation, nearly 50 SCI papers, 200 provincial and municipal scientific projects, 12 provincial technological awards and 50 municipal technological awards. At present, it has a training base for clinical pharmacists approved by Ministry of Health, a training base for “ten thousand training” program launched by Ministry of Health, a provincial Resident Physician Standardized Training Base, a provincial general practitioners training base, an International Enterostomal Therapist Training School, eight provincial specialized nurses clinical teaching bases, a provincial nursing management cadres training base, a provincial technicians training base for Blood Transfusion Department, national stroke screening and prevention base and “Smile Train” designated hospital for cleft lip and palate patients.

With a history of more than 50 years, the hospital has won considerable social recognition and its medical technology has made remarkable progress, attracting a number of patients. As a result, the hospital itself has the strength to become the core hospital of the group.

### **(3) Human resources**

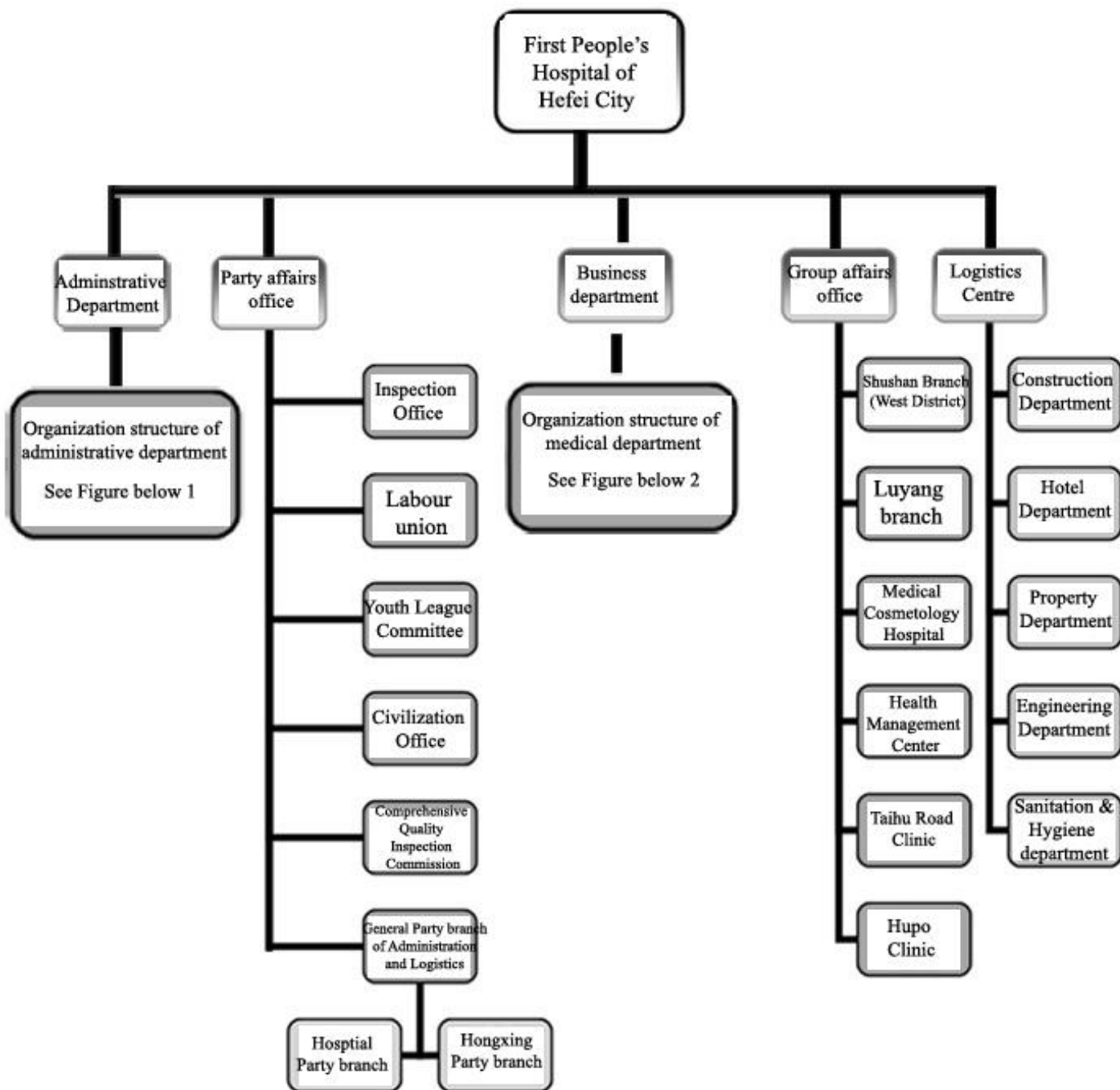
Adhering to the principle of “rejuvenate the hospital through science and education”, the hospital group currently has a well-structured and highly organized talents team. It has 2960 employees, with 950 medical staff, 1960 nurses, 50 administrative personnel, nearly 300 people with the title of vice chief physician or above, 50 people with post-doctoral or doctoral degree, 503 with master degree, one doctoral supervisor, 33 master supervisors, and 88 from Anhui Medical University with the academic title of professors or associate professors.

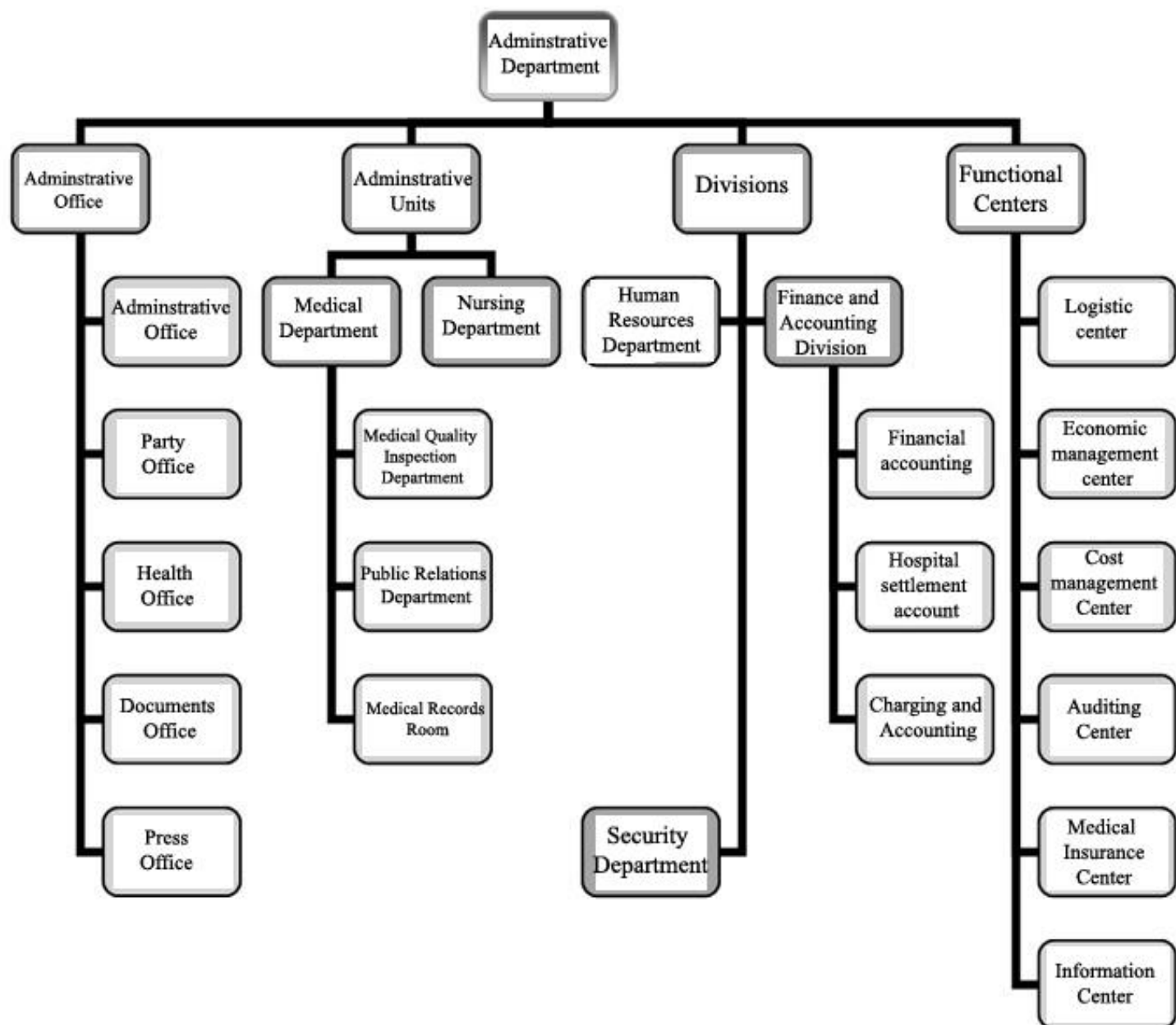
#### **5.4.2 Analysis of capabilities of the First People’s Hospital of Hefei City**

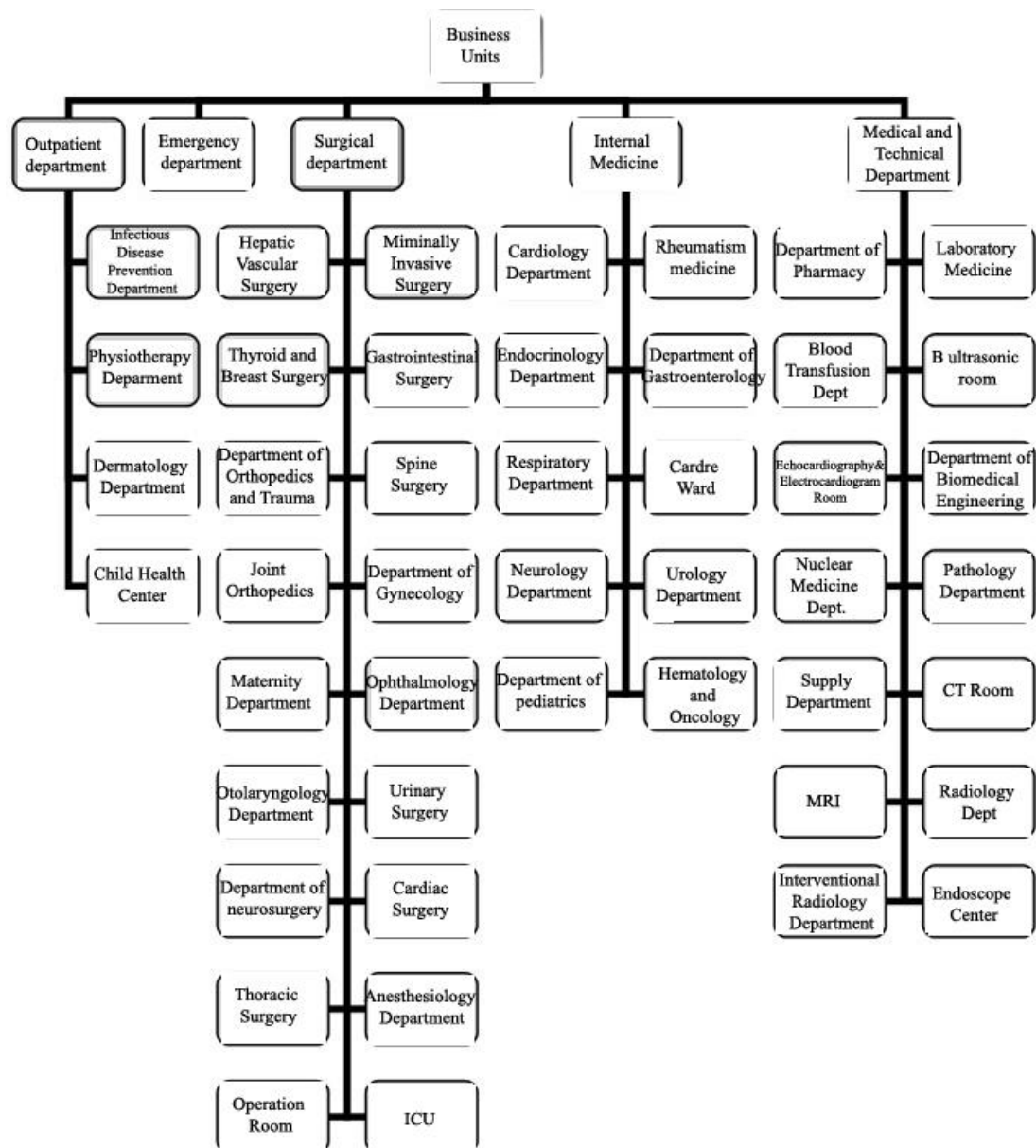
##### **(1) Analysis of the organizational structure**

The flat organizational structure of the hospital group features fewer layers of management. Compared with private hospitals, the flat organization tends to be more flexible and adaptable in changing or unique circumstances, due to its smaller hierarchies and lack of bureaucracy. These are the unique strengths of the hospital group. In this flat organizational structure, the hospital president and vice presidents are empowered and expected to take responsibility for a range of traditionally managerial decisions in their daily routines, therefore they are required to have sufficient abilities to qualify the work (Figure 5-2).

Figure 5-2 Organizational structure of the First People’s Hospital of Hefei City







Source: First People's Hospital Group of Hefei City (2015)

## (2) Medical Marketing Management

The hospital always sends medical teams to provide free medical services for the poor in remote rural areas, including giving out free antihypertensive drugs, body examination, blood test, blood pressure measurement and taking electrocardiograph examination. With deepening of the market economy, the competition in medical market has become increasingly fierce and the means of competition become more diversified. The mature consumers focus more on factors such as environment,

technology, quality and service in choosing hospitals, thus setting higher demands for service attitude, service level, service methods and service efficiency. This has presented challenge for hospitals waiting patients to visit them. The medical market has shifted from seller's market to buyer's market. The First People's Hospital Group must adapt to the market change and actively promote the marketing.

### **(3) Analysis of strengths of medical technologies**

With strong technical strengths, the hospital has domestically taken the lead in many medical technologies such as organ transplantation, replantation of severed fingers, joint replacement and endoscopic surgery. It has many provincial level leading medical technologies including combined heart-lung transplantation, intracardiac surgery under direct view under extracorporeal circulation, interventional cardiac bypass surgery, allogenic liver transplantation, allogenic renal transplantation, bilateral hip and knee joints replacement, orthognathic surgery for correction of maxillofacial deformities, total tongue reconstruction, coronary artery bypass grafting without cardiac arrest and aortic arch replacement.

### **(4) Human resources management**

(a) Incentives: the hospital has taken a more effective incentive measures and the performance salary is closely tied to the workload.

(b) Training and study: in order to strengthen the subject construction and speed up the cultivation of talents, the hospital actively encourages medical staff to participate in the academic meetings and study and grasp new medical technologies in order to improve diagnosis and treatment level.

(c) In order to improve the practical ability of young doctors and the capabilities of scientific research of academic leaders, the hospital always sends young doctors to study new medical knowledge in other medical organizations and introduces new medical technologies.

### **5.4.3 VRIO model analysis of the First People's Hospital Group of Hefei City**

Based on the definition of enterprise resources and capabilities and two assumptions that resources are heterogeneous and immobile, VRIO model is a widely

used business analysis framework consisting of four questions: the question of Value, the question of Rarity, the question of inimitability and the question of organization. Table 5-1 below summarizes the analysis of the VRIO model for this hospital group. The results of these four questions determine whether the resources or capabilities of the hospital are strengths or weaknesses. As can be seen in Table 5-1, resources that generate sustained competitive advantages include human resources, organizational culture, information technology, space layout, supervision and early warning. The intangible assets are at a normal level and the tangible assets are at a disadvantage.



Table 5-1 VRIO model analysis of the First People's Hospital Group of Hefei City

Resource or capability	Valuable?	Rare?	Costly to imitate?	Exploited by the organization?	Strength or weakness	Competitive implication	Economic performance
Tangible assets	Yes	No	No	Yes	weakness	Competitive disadvantage	Below average
Intangible assets	Yes	Yes	Yes	Yes	strength	Competitive balance	Average
Human resources	Yes	Yes	No	Yes	strength	sustained competitive advantages	Temporary above average
Organizational culture	Yes	Yes	Yes	Yes	strength	sustained competitive advantages	Above average
information technology	Yes	Yes	No	Yes	strength	sustained competitive advantages	Above average
Space layout	Yes	No	No	Yes	strength	sustained competitive advantages	Temporary above average
Supervision and early-warning	Yes	Yes	Yes	Yes	strength	sustained competitive advantages	Above average

Source: the author.

#### 5.4.4 SWOT analysis

Currently, the hierarchical medical system in China's health reform requires: focus on establishing some vertical hospital groups or medical consortiums with a certain scale, strong subjects advantage and wide coverage of medical services in a region in order to achieve the integration of services, information, health payment and organizations. The group members are linked up by assets. The local government can explore various kinds of grouping forms such as medical alliance, medical consortium, medical group, specialty hospitals alliance and remote medical assistance network.

Therefore, the hierarchical medical system has provided opportunities for the First People's Hospital of Hefei:

(1) Currently, the medical staff of the First People's Hospital of Hefei usually spends most of their time treating the common diseases. After the hierarchical medical system is put in place, the patients with common diseases, frequently-occurring diseases and chronic diseases will be referred to basic level or secondary hospitals, which can substantially reduce the patient visits to the third-level hospitals. Thus, the medical staff in third-level hospital can devote more energy to making management innovation, dealing with difficult and complicated diseases, developing advanced medical technology and carrying out scientific research and teaching work, thus comprehensively enhancing the potential of subject development. Besides, the medical staff will have full time to effectively communicate with patients and show more humanistic care for them in order to harmonize the physician-patient relationship.

(2) It is helpful to optimize the service process of the First People's Hospital of Hefei, improve the medical experience of patients and improve the patient satisfaction. For example, if the deductible of referral patients can be scrapped, the economic burden of patients will be relieved and meanwhile the medical expense per visit to the First People's Hospital of Hefei will also be reduced to a certain extent.

The challenges presented by the hierarchical medical system:

(a) Reduction of outpatient visits and hospital admissions. When the hierarchical

medical system is put in place, the outpatient department will be the first to be affected as a result of significant reduction of outpatient emergency visits, number of inpatients and total patient visits. Especially when the financial support from government is insufficient and the medical insurance system and service prices are not reasonable, the hospital's profits and medical staff's income will be noticeably affected and even worse, the hospital's development will be hindered and the talent team will become unstable.

(b) The hospital scale will be strictly controlled. While implementing the hierarchical medical system, the government will adopt strict measures to curb the scale expansion of public hospitals. For instance, the document released by the China's National Health and Family Planning Commission (NHFPC) in 2015 pointed out that the public hospitals with 1500 beds or more must apply to the NHFPC for approval of extra beds.

(c) Increased mobility of medical staff. With government further pushing forward the multiple-site practice of certified practitioners and with the proposal of "Internet plus" strategy in the first half of 2015, the internet medical services are growing vigorously due to the influx of abundant capital and talents. In these circumstances, the excellent doctors will be undoubtedly much favored by the internet medical organizations. In addition, the reduction of hospital business income, environment improvement of basic-level hospitals (for example, income and professional title evaluation), the implementation of multi-sites practice and impact of internet medical service will further accelerate the flow of medical staff.

(d) Increased difficulty in hospital management.

Medical organizations need a long time to plan their development, and therefore the stability of the organizations is very important. The increased mobility of medical staff caused by the implementation of hierarchical medical system and the impacts from all sides will increase the difficulty in hospital management and affect the hospital development plans and operation. The competition between hospitals is no longer solely embodied in the competition between medical staff but more in the competition between hospital platforms (for example, organizational structure, system,

culture). Therefore, what working environment a hospital can provide for its employees has become more important. The First People's Hospital of Hefei needs to constantly adjust management and operating strategies (for example, hospital repositioning, post repositioning and performance incentives) to deal with the composition change of outpatient patients and inpatients as well as the retraining of medical staff (notably nursing staff) and their post reassignment. After the hierarchical medical system is put in place, the First People's Hospital of Hefei will mainly receive patients with difficult and complicated diseases, which will put pressure on medical insurance management.

(e) Increased medical risks. When transferring the patients to the lower-level hospitals, the doctors in the upper-level hospitals generally know little about the service level and treatment capability of lower-level hospitals. Therefore, once there are medical disputes or medical lawsuits between the referral patients and the lower-level hospitals that receive them, the doctors who transfer these patients will get into trouble. Unfortunately, the current law has not yet made a clear definition of responsibility for the problem. The implementation of hierarchical medical system will inevitably lead to the reduction of patients. If the First People's Hospital of Hefei still keeps the medical fees unchanged, then it may have to depend on overtreatment to maintain its sustainable development and the stability of medical staff (no pay cuts). However, it is perfectly possible to increase the physician-patient conflicts.

(f) Intensified industry competition. In a sense, the First People's Hospital of Hefei is faced with the competition from insiders and outsiders. On one hand, it needs to compete for patients with other public hospitals in basic level and same level. On the other hand, the hospitals sponsored by social or foreign capital are also its strong competitors.

#### SWOT analysis

##### 1. Strengths

The First People's hospital of Hefei enjoys big brand influence and high reputation and has distinctive superior subjects. With a group of excellent talents and large number of advanced medical equipments plus strong scientific research strength,

the hospital can perform high, precise and top-notch operation and provide high-quality medical services. Besides, it has advantages in teaching and talent cultivation. All these have laid solid foundation for building a hospital group with regional influence.

## 2. Weaknesses

Aside from some superior subjects, many subjects still lag behind; the information construction and collaborative construction remain to be improved; the modern hospital management system remains to be perfected.

## 3. Opportunity

The China's governments provide great support for public hospitals to form medical alliance, medical consortium, hospital group and specialty hospitals alliance. The implementation of the hierarchical medical system will greatly relieve the medical staff in large public hospitals of burden and pressure. Thus, the medical staff can focus their energy on dealing with difficult and complicated diseases, scientific research and teaching. The large public hospitals mainly receive patients with difficult, complicated and critical diseases, which can help these hospitals accumulate more methods and experience of treating intractable diseases and further improve their service level. By promoting hierarchical medical system through medical consortiums or medical group, the large public hospitals can shorten the average length of stay and improve the utilization rate of hospital beds.

## 4. Threats

The external threats include the reduction of outpatient visits and number of inpatients, change of patients' diseases, strict control over the scale expansion of large public hospitals by Chinese government, fiercer medical market competition, the competition from other large public hospitals, private hospitals and foreign-funded hospitals for human resources and patients.

### SWOT analysis strategies:

i. The First People's hospital of Hefei should take full advantage of the platform as a large public hospital and use its strengths to seize the external opportunities (SO strategy). Depending on its superior subjects, high-caliber talents and advanced

medical equipments, the hospital should play a leading role in medical science, technological innovation and talent cultivation.

(i) In terms of allocation of medical resources, the hospital should put more resources into the emergency medicine center and ICU, provide more services (including increasing medical staff, expanding service space, adding beds and increasing input in medical equipments) for critically ill patients and patients with difficult and complicated diseases and actively reduce the ordinary outpatient services.

(ii) In terms of department setting, the allocation and integration of medical resources should break the boundaries of original subjects and specialties, encourage the multidisciplinary treatment of critical diseases and strengthen the cooperation and communication between different departments.

(iii) The hospital should vigorously promote the development of general medicine and provide general medical services. Based on the standardized training base for general practitioners, the hospital should take good advantage of hospital teaching and actively provide training for grass-roots general practitioners to improve their clinical skills and guide the basic-level medical organizations in treatment of common diseases and frequently-occurring diseases.

ii. The implementation of hierarchical medical system is both opportunity and challenge. The First People's Hospital of Hefei should use external opportunities to improve internal weaknesses (WO strategy).

(i) Lay emphasis on the treatment of difficult diseases and the research and development of high medical technologies. The hospital should keep abreast of the international forefront medical technologies, actively provide new clinical services based on new technologies, develop original technologies, improve the treatment capability and scientific research ability of medical staff, constantly strengthen the core technologies, give full play to the distinctive specialties and increase core competitiveness.

(ii) The slogan of hierarchical medical system policy in county areas is "major diseases can be treated in county hospitals". This shows that the county hospitals will

serve as the front-line goalkeepers of hierarchical medical system, which means they have a big say in patient referral. The First People's Hospital of Hefei should establish closely-knit hospital group by forming an alliance with county hospitals, community health centers, township hospitals and other medical organizations. The transferring high-quality medical resources to grass-roots medical institutions can not only improve the management skills of medical staff but give them more say in transferring critically ill patients to upper-level hospitals.

(iii) Currently, China encourages the social capital to sponsor non-profit health care institutions. The First People's Hospital of Hefei should strengthen cooperation with hospitals sponsored by social capital. By taking advantage of the brand, talents and technologies and combing with the flexible and efficient characteristics of private hospitals, the hospital should use market means to provide high-end medical service in an effort to offset the income loss caused by the implementation of hierarchical medical system and separation of dispensing from prescription.

(iv) Using technical means such big data, cloud computing, mobile internet and internet of things and exploring internet plus based "intelligent medical services" (for example, remote consultation, remote diagnosis, remote training and health records management) to promote the sharing of medical resources and improve the accessibility and efficiency of medical services.

iii. The First People's Hospital should use internal strengths to avoid or minimize the threats of external competition (ST strategy). First, adjust the management and layout of emergency and outpatient department and improve the medical service for patients with critical and difficult diseases in order to attract more patients with severe diseases; second, perfect the function of emergency and outpatient department. With the implementation of hierarchical medical system, the emergency and outpatient department in large public hospitals will focus on serving patients with critical and difficult diseases. Based on the disease spectrum of emergency patients in recent five years, the First People's Hospital of Hefei should provide outpatient consultation service for difficult diseases, multidisciplinary comprehensive outpatient service, expert outpatient service and outpatient service for special diseases; third, improve the

efficiency of emergency service. According to the disease severity of the emergency patients, these patients will be first classified then treated by order of priority; closely monitor and analyze the data such as emergency and outpatient visits and the composition of patients in order to guide the adjustment of outpatient service process, resources allocation and personnel arrangement.

The analysis is summarized in Table 5-2 below:



Table 5-2 SWOT Analysis

Internal Capabilities	Strengths	Weaknesses
	External Factors	Advantageous location Top-notch medical skills Advanced medical equipment High public recognition
Opportunities	SO	WO
Background of healthcare system reform Imbalanced distribution of medical resources Importance attached by local government Experience of foreign hospital groups	Establish a hospital group, extend medical service radius, integrate medical resources, complement each other's advantages, share equipment and technology, unify logistics and administrative management, and reduce management costs.	Rebuild the hospital at another site
Threats	ST	WT
No precedent of hospital consolidation in China No legal support	Maintain the current situation	Strengthen cost control

Source: the author.

## **5.5 Consolidation Process of the First People's Hospital of Hefei City**

Over the past ten plus years, along with the healthcare reform, in line with the law of development in the medical market, and based on development of the First People's Hospital Group of Hefei, the hospital group has gone through the following three stages.

### **5.5.1 Stage of Establishment (2004.11-2005.6)**

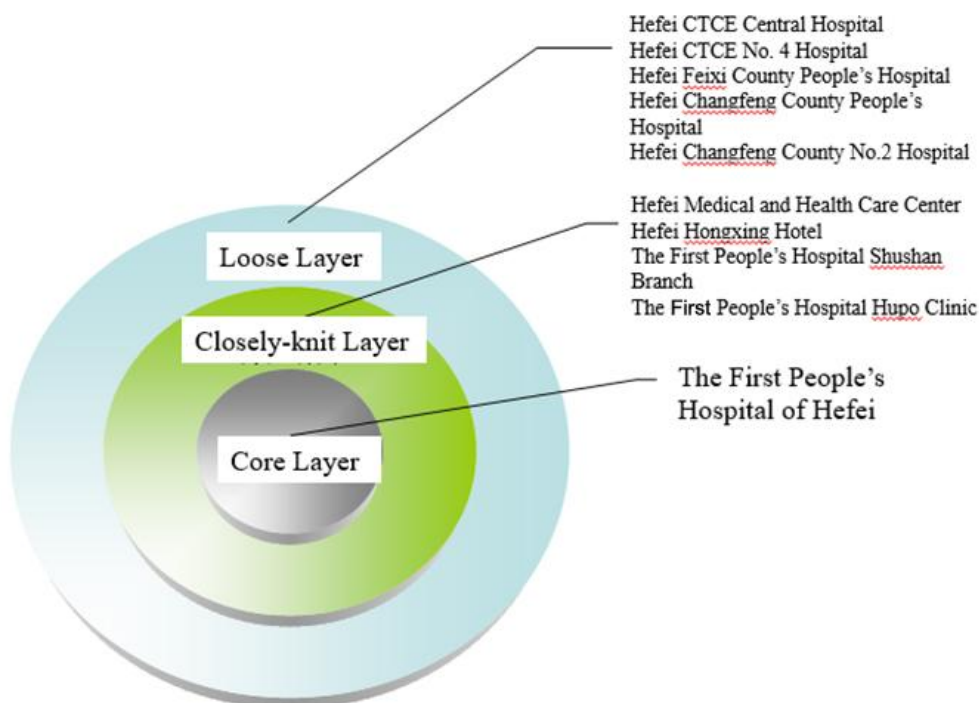
November 18, 2004 marked the 50<sup>th</sup> anniversary of the First People's Hospital of Hefei City. It was on the same day that the first state-owned hospital group in Anhui Province, namely, the First People's Hospital Group of Hefei City was established. The objectives put forward by the hospital group were: to make the hospital group bigger, stronger, better, more substantial and more targeted and make efforts to achieve the coordinated development between the urban and rural areas, different regions and large, medium and small medical organizations through consolidation strategy.

The First People's Hospital Group of Hefei City is composed of primary, secondary and Grade III hospitals as well as enterprises in Hefei City area (see Figure 5-3). The hospital group was initially a stable economic organization with a three-level vertical structure, with the First People's Hospital of Hefei City being the core, secondary hospitals directly under the hospital, trusteeship hospitals (in 2003, the former Hefei Worker Sanatorium was entrusted by the Hefei municipal government to the First People's Hospital of Hefei City and built into today's Hefei Health care Center, the first trusteeship hospital of the First People's Hospital of Hefei City), and long-term leasing enterprises being the closely-knit level and contracted cooperative hospitals as the loose level. Because all member hospitals enjoy an independent legal status, the group is a consortium of independent legal persons. The core hospital and other members of the group all have independent legal person entity and enjoy civil rights and undertake civil liability according to the law. In hospitals of

closely-knit level, the head of the hospital and the chief financial officer are appointed, while the trusteeship hospitals fulfill their rights and obligations according to the contract. As for members in the loose level, their system, relationship of administrative subordination, and name remain the same. They voluntarily agree to hang the plate of the First People’s Hospital Group of Hefei City. The members should be responsible for their own risks, share resources with each other, complement each other’s advantages, support each other and strive for mutual development.

The group, at the initial stage of its establishment, had developed into a medical industrial complex with multi-level cooperation between group members in treatment, teaching, research and logistic services through sending experts to member hospitals, technical support, medical teaching and medical resources sharing.

Figure 5-3 Development mode and composition at the initial stage of the First People’s Hospital Group of Hefei City



Source: the author

### **5.5.2 Stage of Development (June 2005.to March 2007)**

After the First People's Hospital Group was officially established, it seized the opportunity of reform and decisively introduced new management system and operation mechanism, focusing more on the inner construction of management system and operation mechanism reform to coordinate the group's software and hardware development. As a result, the group was able to develop constantly as demands of the medical market grow and the scale of the group expands. Combining with the actual situation and through the constant exploration in practice, the group has primarily established an overall operation and management mode of four types and six dimensions and entered into the development stage.

The four types of the overall management mode of the hospital group are: compact type, in which ownership and management rights are integrated; closely-knit type, in which ownership and management rights are separated; semi-closely-knit type, in which liability is limited to trusted management; and loose type, in which the group only gives management guidance, technical support, equipment support and personnel support.

The six dimensions of the overall management mode of the hospital group cover the core dimension, community healthcare dimension, the county dimension, township health centers dimension, company employee hospital dimension and comprehensive dimension. To be specific, first, the core dimension includes members of the closely-knit level such as the Medical and Health Care Center of Hefei City, Shushan Branch of the First People's Hospital of Hefei City and the headquarters of the First People's Hospital of Hefei City. Second, in the community healthcare dimension, through the Hupo Clinic, Taihu Road Clinic and Government Affairs Center Outpatient, the group extends its presence to communities by providing medical treatment, disease prevention, healthcare, rehabilitation and health education, setting an example for other large general hospitals to promote community healthcare development. Third, in the county dimension, through development of the neighboring Changfeng County People's Hospital and Feixi County People's Hospital,

the group expanded its reach to seize market share. Four, at the township health centers dimension, the group use methods of targeted bidding, and department heads helping counterparts to manage towards the Changfeng County No. 2 Hospital and Changfeng County No. 4 Hospital to actively support rural healthcare development. Five, in the company employee hospital dimension, the group offers and exports management, teaching, further learning and technical support to China Tiesiju Civil Engineering Group Central Hospital and No. 4 Hospital, which is a move to promote the development of hospital employees and expand the medical market. Six, in the comprehensive dimension, the group improved operation and management of Hongxing Hotel so as to ensure that the logistics department of the group operates in a social and business-like manner.

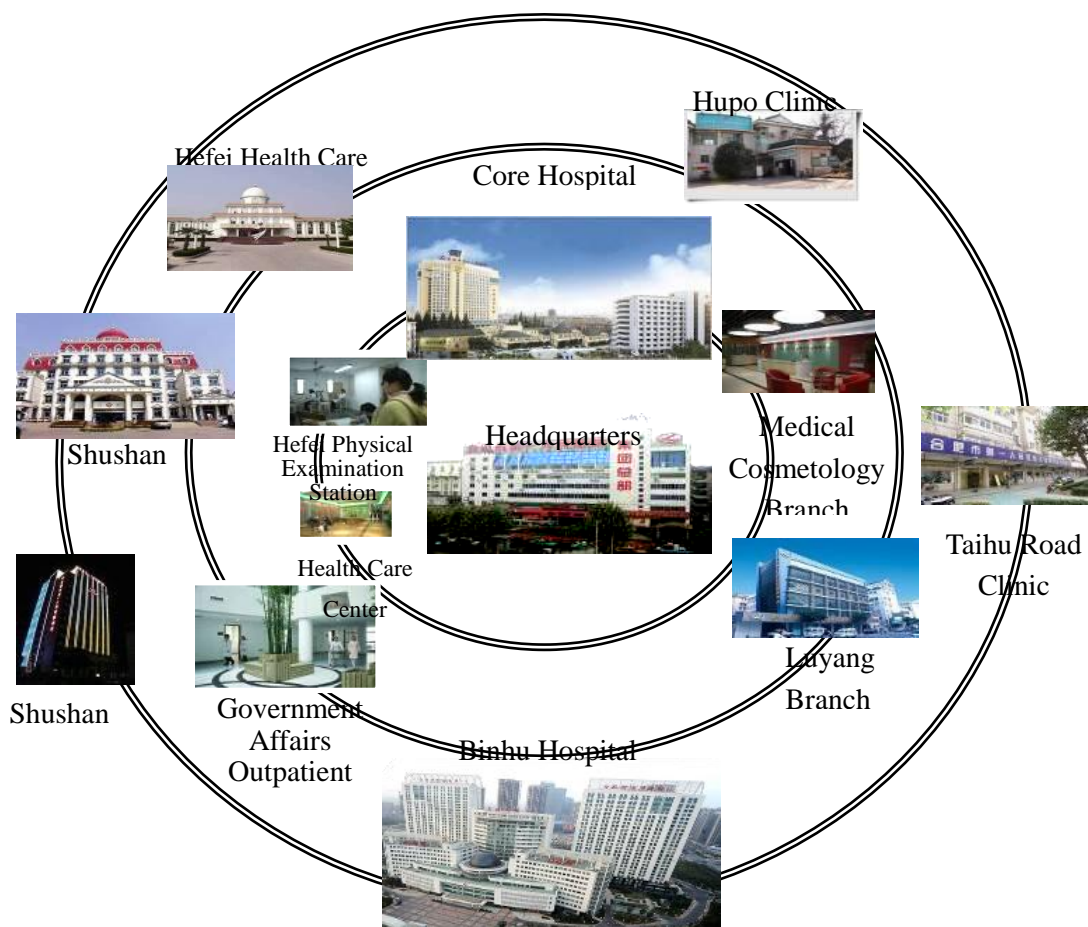
At this stage, the First People's Hospital Group of Hefei City enhanced its inner construction and established the conceptual framework of group development. Meanwhile, through the education of management philosophy and professional technology of the group members, it helped to improve the overall level of the medical and healthcare industry of Hefei City. In addition to improving the level of the core hospital, it also helped promote development of other hospitals at the same level, effectively bringing up the overall medical technology level within the area.

### **5.5.3 Stage of Maturity (March 2007 till now)**

At this stage, the scale of the group has been dramatically expanded. Some members that joined the group in 2004 had been stripped from or integrated into the group depending on their ability to adapt to the development of the new group. After years of exploration, the hospital group has greatly enforced its overall strength and expanded its medical market through effectively integrating resources and complementing each other's advantages, exploring a unique set of development philosophy. Currently, the integrated management from the development planning, asset management, performance assessment, institutional settings and material procurement, to the appointment of managers, personnel management and salary management has been implemented in this group (see details in Chapter 6).

The hospital group actively expanded westwards and southwards. According to the urban planning of Hefei City, namely the “141 strategy” (forming a spatial structure with one central city, four peripheral city groups and one Binhu new district in the city-and-town concentrated area), the hospital group formulated a “131” medical space development strategy layout. In the figure “1” represents the headquarters of the First People’s Hospital of Hefei City; “3” represents the layout of member hospitals that are according to the three ring construction of Hefei City; and the second “1” represents the Binhu Hospital of Hefei City) (see Figure 5-4). At the same time, efforts have been made to strengthen the development, coordination, planning, connection and interaction of the hospital group, gradually expanding the scale of the group and building a province-wide medical market network.

Figure 5-4 – “131” Group Medical Space Development Strategy Mode of the First People’s Hospital of Hefei City



Source: the author

#### **5.5.4 Analysis of the Strategic Choices of the First People's Hospital Group of Hefei City**

Based on the aforementioned information, Table 5-3 summarizes the whole process of the hospital group from its establishment till now, describes and analyzes relevant decisions and reasons to make the decisions and the impact on the actual capability of the hospital group.

Table 5-3 Major Decisions in the Establishment and Development of the First People's Hospital Group of Hefei City

Year	Decision/Fact	Reason and Purpose	Impact on Actual Capability
2004	Establishment of hospital group	To achieve resource sharing, complementary advantages, mutual support and mutual development	Taking their own risks independently, the group has developed into a multi-level collaboration medical alliance in treatment, teaching, research and logistics service through means of sending experts, technological support, teaching support and guidance and medical resource sharing.
2005-2007	Focus more on soft power development manifested in management system and operation system reform, lay equal emphasis on soft power and hard power	To enhance the overall strength of the hospital group through education of management concepts and professional skills for member hospitals	It helps member hospitals to communicate with each other on their culture so as to discard the dross and select the essential.
2007till now	Implement integrated management among group members in development planning, asset management, performance evaluation, procurement, recruitment and salary distribution	To intensify development, coordination, planning, liaison and interaction of the hospital group	A closely-knit, integrated, and highly coordinated hospital group takes into shape.

Source: the author.



## **5.6 Analysis of the motivating factors promoting the consolidation of the First People's Hospital group**

In this chapter, based on the case study, the semi-structured interviews are made with 25 experts to know their views about the development bottleneck of the First People's Hospital of Hefei City. Meanwhile, the advantages and key factors in favor of the development of the hospital group are identified and put forward.

### **5.6.1 Development bottleneck of the First People's Hospital of Hefei City before the establishment of the hospital group**

Of the 25 experts interviewed and reporting back to the period before the establishment of the hospital group, 24 think that the medical space of the hospital is too scarce (accounting for 96% of the total surveyed); 17 think the beds are insufficient (68%); 13 consider that the non-medical staff is redundant and the cost burden is heavy (52%); 22 believe that the service coverage is limited (88%); one thinks that the division of labor is not clear (4%). Thus it can be seen that before the establishment of the hospital group, the narrow medical space and insufficient beds of the First People's Hospital of Hefei City cannot satisfy the medical needs of patients. Extra beds outside the wardrooms were often seen and the medical environment was very poor. However, the establishment of the hospital group has offered many advantages, such as increased service coverage, integrated advantage resources, and sufficient beds, which have solved the problem of "difficult access to health care services" in the geographic area served and increased the hospital's influence and reputation.

### **5.6.2 Reasons for the consolidation of the First People's Hospital of Hefei City**

All 25 experts agree that the hospital needed to take the path of consolidation. They support the hospital consolidation because of the following reasons: first, by

establishing a hospital group, the management system of combining unified management and division of management could be adopted. The hospital group could improve the recruitment standards of management and medical personnel, increase management standards, cut off the redundant staff and reduce management costs. In addition, hospital consolidation can help to increase brand awareness and grab larger market share. The hospital group can offer many advantages, for example, attain economies of scale, integrate high-quality resources, improve the overall competitiveness of the First People's Hospital Group of Hefei City, substantially increase the patients' trust, increase brand awareness and attractiveness to patients in the local region or even across the country and expand the medical market. It can also promote the rational use of idle resources and realize complementary advantages.

The hospital group can become highly adaptive to the changing external environment in order to expand the space for survival and development and help to integrate medical resources in the local region and achieve complementary advantages. The equipment, talents and technologies could be shared among group members, thus achieving the goal of optimizing the medical resources allocation. For example, the unified procurement can reduce costs and unified settlement can save financial costs. Meanwhile, the hospital consolidation can promote the internal reform of member hospitals and realize the resource sharing of medical examination, medical imaging and drugs allocation while allowing to expand medical space and enhance the hospital's influence. The hospital group can provide across-district medical services in a city, thus increasing the medical space and service coverage. Based on the scale development, the hospital group can further develop medical technologies and provide better medical services. Meanwhile, the integration of medical resources can facilitate the implementation of hierarchical medical system and make the member hospitals operate in close collaboration. Wider services coverage and increased number of patients can help promote the development of subjects and, at the same time, talent sharing and more platforms can help provide broader development space

for professionals.

This research suggests that all experts surveyed agree with the choice of the path of consolidation and think it is an effective way to realize the sustainable development of the First People's Hospital of Hefei City. They believe that the establishment of the hospital group can break the development bottleneck of the First People's Hospital of Hefei City, expand medical space, integrate the medical resources of member hospitals, realize complementary advantages and improve the overall competitiveness of the hospital, thus providing new opportunities and new platforms for the hospital development.

### **5.6.3 Key factors influencing the development of the First People's Hospital Group of Hefei City**

The 25 interviewees sorted out several motivating factors for the hospital consolidation by order of importance: first, establish unified and standard management system; second, build high-quality management team and cultivate senior management talents with rich management experience and professional knowledge.

Fourteen experts believe that an efficient management can yield high profits and promote development (accounting for 56% of the total surveyed). They argue that in order to avoid the problems caused by the unclear ownership of property rights, the hospital group shall possess the status of legal person. Meanwhile, the management committee or board of directors with subordinate general office should be established. The general office is responsible for: (1) appointment and performance assessment of leaders of member hospitals; (2) setting the development direction and priorities for the group and approving the purchase of large-scale medical equipment; (3) procurement and supply of drugs and logistics support. When the logistics affairs of member hospitals are incorporated into the unified management of general office, the group members can focus more efforts on providing better medical services and

reduce medical costs.

Thirteen interviewees think that the clear ownership of property rights can help strengthen the group's control over its members and make them become more committed to the group (52%); third, gain the support of policies and laws. Ten experts argue that the government should play an active role in coordination and planning of the hospital consolidation, overall coordination, policies guarantee and supervision and meanwhile provide policies to support the hospital management, personnel and assets and increase the input. For example, scale construction investment, providing more beds and introducing high-end medical equipment (40%) while emphasizing the overall benefits of the group, strengthening organizational coordination and multi-dimensional performance assessment, promoting the common development of group members, strengthening the internal coordination between members and giving full play to the overall function.

Nine interviewees believe the key factor that can promote the development of the hospital group lies in the effective integration and efficient utilization of resources of group members. By introducing fine management, the advantages of the member hospitals can be brought into full play and the members can complement each other and achieve win-win results.

Six interviewees think the group members should give full play to their own advantages and that complementary advantages should be reinforced among member hospitals. By giving full play to the advantages of subjects and talents of member hospitals, the medical development space can be substantially expanded (24%).

.Five interviewees think that the hospital group should build brand awareness, create brand image and increase brand influence (20%) through improving management efficiency and service quality, developing medical technologies, and improving the quality of employees

All interviewees think the hospital consolidation can offer the following advantages: (1) lower costs: manpower saving, lower management costs and less

hardware input; (2) higher efficiency: the communication efficiency inside the group can be improved; meanwhile, with the improvement of management procedures and mechanisms, workflow and information flow, the operation efficiency can be ultimately improved; (3) reduced risks: because the headquarters hospital has a good understanding of the business risks of group members and can conduct regular risk inspections and control, the risk management costs can be reduced; (4) better medical experience: the patients can enjoy the same quality of medical services in different member hospitals of the group; (5) more reasonable allocation of resources: the headquarters hospital is highly capable of integrating the resources of its members and input the most scarce resources into the place where the biggest overall benefits can be generated in order to achieve maximum marginal revenues; (6) establish rational talents mechanism, including the rational flow of medical talents and talent introduction. Currently, the high-caliber management and professional talents are still urgently needed.

Four interviewees think that the hospital group should consistently cultivate medical and nursing talents and establish the talent pool in order to form a multi-tiered and well-structured talent team. When the group scale is gradually expanded, the talents can serve as the internal driving force to promote the sustainable development of the hospital group (16%).

Three interviewees think that the networking information management platform based on OA system can improve the operation efficiency and quality of the system (12%) while two of the interviewees think that employees are the key factor for the development of the hospital group. Therefore, only by establishing a fair and reasonable distribution mechanism can we fully mobilize the employees' enthusiasm, thus promoting the sound development of the group (8%). One expert thinks that the hospital group should accurately identify the service coverage, ensuring that the medical services can meet the needs of patients in the city while avoiding the oversupply of medical services. Besides, the talent resources and medical equipment

should be allocated according to the scale of member hospitals and the key service programs of medical departments (4%).

According to the interviews results, it was found that the key motivating factors that can promote the consolidation of the First People's Hospital Group of Hefei City include the government's policy support, reform needs of internal management in public hospitals and needs for resource integration. Most experts agree that the key motivating factors include establishing unified and standard management system and management team, and improving management system.

## **5.7 Chapter Summary**

This chapter explains the development of the First People's Hospital Group of Hefei City from the embryonic stage to mature stage and from loose to closely-knit type, as well as its strategic decision to choose the path of consolidation.

The decision to take the path of consolidation for the First People's Hospital Group was not made overnight. Instead, it is an important strategic decision made by the hospital's decision makers to adapt to the environment, increase market share and pursue a sustainable development against the backdrop of China's healthcare reform. The purpose of forming a hospital group is to promote development of township hospitals, county hospitals, community hospitals and hospital employees, increase interaction between provincial and municipal hospitals, promote development of the First People's Hospital of Hefei City itself and achieve coordinated development between urban and rural areas, among different regions and large, medium and small medical institutions. This purpose is more in line with the strategic management theory in the post-1990s, which supports the forming of strategic alliances. To be specific, competition is built based on one's own advantage and other's competitive advantage to share the market, resources, knowledge and technology, so as to raise the overall competitiveness.

The implementation of the decision is also consistent with the process of

strategic management. The strategic management process is a dynamic process of interaction, circulation and perfection of strategic analysis, strategic choice and evaluation as well as strategic implementation and control. As for this case:

First, the external environment of the hospital and background of the hospital group's survival from the market have been analyzed. In China, the establishment of a hospital group is a market economy behavior encouraged by the government, because consolidation of hospitals is considered to be an effective way to solve the problem of imbalanced distribution of healthcare resources and low utilization rate.

Second, the bottleneck in the development of the core hospital, namely the necessity of establishing and transforming itself in a hospital group was analyzed. The hospital faced problems of limited medical space, scarce land resources, and insufficient beds. The medical staff was overloaded all year around. At the same time, as an old hospital that had existed in the planned economy for decades, it had to face heavy historic burden and, located in the capital of Anhui Province, it had to face fierce competition from many other hospitals.

Finally, resources accessible to the hospital, namely feasibility of establishing the hospital group, were analyzed. To be specific, advantages such as experience of asset restructuring from foreign hospital groups, the rare opportunity of public hospital reform in recent years and the importance attached by the local government to hospital groups made the conditions for the process of hospital consolidation smooth without being obstructed by barriers of policies and administrative constraints.

After analyzing the external and internal environment (opportunities, threats, advantages and disadvantages) using VRIO business analysis framework, we could understand why the First People's Hospital of Hefei City has chosen the path of consolidation.

After the development strategies were formulated, many problems gradually emerged with the passage of time. In response, the strategy has been transformed

from the “three level vertical structure with the First People’s Hospital of Hefei City as the core, secondary hospitals, trusted hospitals and long-term leased companies as the closely-knit level and contracted cooperation hospitals as the loose level to “six levels and four types of overall group management mode” and finally to the currently stable “131 medical space strategic layout for the development of the group” mode (the First People’s Hospital of Hefei City - three-ring layout - Binhu Hospital of Hefei City). The First People’s Hospital of Hefei City has followed the market law and gone through major changes from the embryonic period to mature period and from a loose group to a closely-knit one. Through consolidated operation and development, the hospital group has integrated medical resources, perfected service network, enhanced technical cooperation, improved discipline development, expanded medical service reach and increased the volume and scale of the hospital group itself.



## **Chapter 6 - Analysis of Resources Competitive Advantages of the First People's Hospital Group of Hefei City and its Achievements**

This chapter is divided into four parts. A series of questions previously proposed are answered. What are the factors and issues that stand in the way of the growth of the hospital group? How did the group take advantage of its own resources to effectively address them? Does it need the support from government and policies? What results have been achieved since its establishment? In order to answer these questions, the actual situation and data are used to analyze the development achievements of the First People's Hospital Group of Hefei City. Then the advantageous resources that can ensure the smooth development of the First People's Hospital Group of Hefei City over the past ten years are analyzed from five aspects; third, the difficulties faced by the hospital group and factors affecting the development of the hospital group after it was established are discussed from the perspective of external and internal environment; finally, based on the resource-based theory, the suggestions and possible solutions to the existing problems of the hospital group are put forward.

### **6.1 Analysis of the Resource Advantages of the First People's Hospital of Hefei City**

The competitive advantage of the hospital group since its establishment, to some extent, can be analyzed through VRIO resources, namely, valuable, rare, inimitable and organizational resources.

### 6.1.1 Sustainable Advantages based on Organizational Culture

In order to maintain sustained competitive advantages, an organization must obtain the valuable, rare and inimitable resources that can be exploited by the organization. The hospital culture is a special cultural pattern that combines the characteristics of enterprise culture and healthcare services.

After more than 60 years of development, the First People's Hospital of Hefei City has accumulated profound culture. Meanwhile, it also attaches importance to using the hospital culture to guide and maintain the development of the hospital. It is the first hospital in Anhui province to introduce the Corporate Identity System (CIS), which has generated around 20 kinds of hospital's visual identity systems including hospital's logo, hospital's anthem and hospital's spirit (Figure 6-1).

Figure 6-1 Logo and flag of the First People's Hospital Group of Hefei City



Hospital Logo



Flag of hospital group

Source: First People's Hospital group of Hefei city (2015)

By holding the principle of “put people first”, the hospital should provide more humanistic medical services for patients and meanwhile show more respect for the medical staff. Furthermore, the hospital should introduce detail management, risk management, performance management and operation management to change passive management into source control and shift its focus from process control to target control. In line with the development trend of China's public hospital reform and

combining with the development of medical market, the hospital group should develop a unique set of management ideas, policies, and theories to guide its strategic development as per listed below:

(1) General guidelines: with the health undertaking as the basis and the scientific look on development as the guidance, to pursue development in a sustained and steady way through advanced technology, fine management, profound culture and standardized services

(2) General strategy: with technical expertise as the support, economic laws as the leverage, the reform and innovation as the driving force, the market demand as the direction and the operation management as the accelerator, to keep the hospital advancing with the times.

(3) Development mode: both government and private-funded hospital.

(4) Hospital spirit: fraternity, profundity, unity and hard-working with the objective of establishing a harmonious hospital, making it bigger and stronger.

(5) Hospital motto: strictness, pragmatism, excellence, innovation. Be loyal to the hospital, uphold the hospital's motto and work hard for its development

(6) Hospital's tenets: put patient first, integrity first, first-class technology, service-oriented.

(7) Management ideas: culture is the soul of the hospital, talents are the foundation of the hospital, technology is the weapon of revitalizing the hospital, quality is the morals of the hospital, laws are the treasure of guarding the hospital, image is the art of invigorating the hospital and innovation is the source of strengthening the hospital.

(8) Three Transformations of the medical development: focusing on the central tasks of the hospital, transform the hospital from clinical type to teaching type, from medical type to research type and from fundamental type to high-grade medical organization.

(9) Three transformations in the hospital's management: fully apply the scientific

outlook on the development to the management practice and strengthen the details management, target management and performance management to transform the hospital management from experience-dependent management to scientific management, from flat management to compact management and from vertical management to short-term management.

### **6.1.2 Sustainable Competitive Advantage Based on Information Technology**

The application of information technology has achieved remarkable results in realizing standardized management, reducing costs and improving efficiency and, meanwhile, it is also the breakthrough point for China's healthcare reform and innovation. The *Guiding Opinions of the General Office of the State Council of the PRC on Urban Public Hospital Comprehensive Reform Pilot* (General Office of the State Council of the PRC, 2015) requests to step up the construction and application of medical information system.

The information construction of the First People's Hospital of Hefei City can be traced back to as early as 1994 when the hospital begun to use the HIS (Hospital Information System)<sup>1</sup> to replace human labor for works such as the admission and discharge, fees charging and drugs management. After application of two generations of HIS from 1997 to 2002, the hospital has accumulated rich experience in information construction.

In 2005, the hospital set the goal of building a provincial first class "Digital Hospital" in its annual work plan. Therefore, it initiated the construction of "Digital Hospital" and established HIS, RIS (Radiology Information System)<sup>2</sup>, LIS(Laboratory Information Management System)<sup>3</sup>, and PACS (Picture archiving and communication

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<sup>1</sup>HIS (Hospital Information System) provides the patients' medical information and administrative information for hospital departments via computer and communication equipments. It is a platform where the authorized users can collect, store, process, extract and exchange data.

<sup>2</sup>RIS (Radiology Information System) is a software system that optimizes the workflow management of radiology department, whose typical flow includes registration for appointment, treatment, image generation, film production, report, check and delivery of film to patients.

<sup>3</sup>LIS(Laboratory Information Management System) is an information management system designed specifically for hospital laboratory. Through networking the laboratory apparatuses and computers, the complex operating procedures of registration and input of patients' samples, experimental data access, report reviewing, printing and

systems)<sup>4</sup>, preliminarily forming a digital management system integrated with medical information, medical records, statistics, physical examination software system and medical insurance information networking system. Meanwhile, it established the website of the First People's Hospital of Hefei City to bridge the communication gap between physicians and patients and strengthen outreach efforts. In addition, the construction of digital hospital was proposed in the Development Outline of the First People's Hospital of Hefei City (2006-2010).

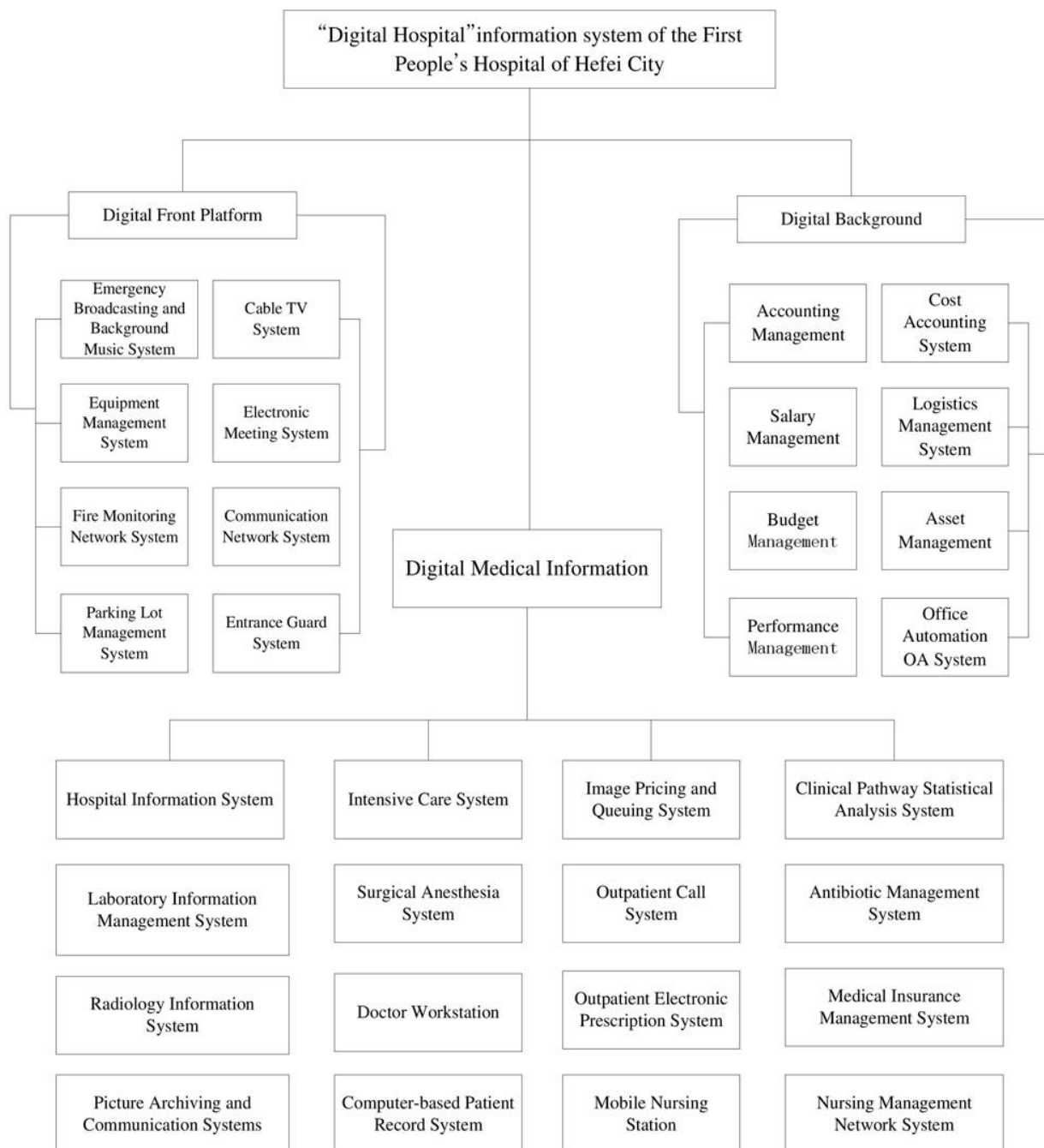
In 2009, the First People's Hospital Group of Hefei City has become the first digital hospital in Anhui province, with distinctive and all-round digital foreground, digital background and digital medical services (Figure 6-2).

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distributing and statistical analysis of experimental data can become more intelligent, automatic and standardized.

<sup>4</sup>With the progress of digital imaging technology, computer technology and network technology, the PACS has been developing rapidly in recent years, which is designed as an integrated system for a comprehensive solution to medical image acquisition, display, storage, transmission and management.

Figure 6-2 The Information System of the First People’s Hospital Group of Hefei City



Source: the author.

The hospital is the first in Anhui province to establish the HERP (Hospital Enterprise Resource Planning) comprehensive operating system<sup>5</sup>, which includes accounting and financial management, budget management, expenditure control, cost accounting and economic management, logistics management, fixed assets management, performance management, human resource management and scientific research fund management. The administrative management information system has not only realized the integration of "material flow, capital flow and business flow", but also strengthened the management in planning, using, coordinating, controlling and evaluating the comprehensive resources like manpower, capital and materials, thus guaranteeing the hospital's stable, safe and healthy development.

The core information system includes Hospital Information System (HIS) (drug management system, charge management system, medical record management system, medical statistics system, president query system), Laboratory Information Management System (LIS), Radiology Information System (RIS), Picture Archiving and Communication System (PACS), intensive care system, surgical anesthesia system, computer-based patient record system, image pricing and queuing system, outpatient call system, outpatient electronic prescription system, mobile nursing station, clinical pathway statistical analysis system, antibiotic management system, medical insurance management system and nursing management network system.

After 20 years of development, the information system of the First People's Hospital Group of Hefei City has witnessed a process from nothing to infancy and further to maturity today. In 2004, in order to adapt to the new pattern of hospital group and meet the higher requirement of information requested by the new medical reform, the hospital group took the initiative to plan and build an integrated data center platform where data can be mutually exchanged and shared, programs can be mutually called and process can be mutually coordinated among different systems and meanwhile different kinds of data can be searched and processed in a unified portal,

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<sup>5</sup>HERP is a hospital management software system integrated with material resource management, human resource management, financial resource management, information resource management.

ultimately realizing the data exchange and remote data exchange between districts of the hospital.

The application of the information system has contributed greatly to the development of the hospital group: first, the medical quality is improved. Through the medical quality control system, the quality of medical records can be randomly checked at any time and the physicians can quickly acquire the patient's information from the doctor workstation, thus improving the efficiency of information utilization and management; second, the medical process and fee charging become more transparent; the patients can clearly know the medical expenses they need to pay by checking the comprehensive inquiring system; third, the hospital's management level is improved; with more useful information in the information system, the managers can make decisions based more on data than experience.

### **6.1.3 Sustainable Competitive Advantages based on Human Resources**

The human resources are a source of sustained competitive advantages. The human resources of the hospital group, in combination with its organization structure and performance assessment system have become valuable, rare and inimitable resources that can generate the sustained competitive advantages.

#### **6.1.3.1 Basic Situation of Employees**

All employees of the hospital group are put under unified management: there are 80 percent of doctors with master's degree, 10 percent of them with doctor's degree and more than 60 percent of nurses with bachelor's degree. Only the academic leaders are given the budgeted posts, other employees have to compete for posts and work under contract. The employees are given the promotion opportunities and competition platform in order to arouse their enthusiasm.



### **6.1.3.2 Sustainable Advantage based on the Management Structure**

#### **(1) Streamline the administrative departments**

After eight years of reform, the administrative and logistics departments of the First People's Hospital Group of Hefei City have been gradually streamlined. Previously, the administrative staff, medical staff and logistics staff were roughly equal in number. Currently, the administrative staff and logistics staff only account for 3% of the total employees of the hospital. Meanwhile, the situation of overstaffed organizations, overlapped functions, high management costs, varied quality of personnel and low efficiency have been greatly improved. To be specific, the original logistics department with 337 employees getting an equal share regardless of the work done and 37 functional departments has been reorganized into the Hospital's Office, Medical Department, Nursing Department, Division of Human Resources, Division of Finance and Division of Security (or simply called "123 - One office, two departments and three divisions").

#### **(2) Establishment of operation departments**

The hospital group pays close attention to the reform direction of public hospitals and the development of medical market and formulates strategic plans according to economic laws and market needs. It has set up the logistics center, audit center, economic management center and logistics management center (or referred to as "four centers") with the staff accounting for 6% of the total employees.

#### **(3) Outsourcing of logistics service**

In accordance with the ISO9001 quality management standard, the logistics management center is tasked with comprehensively supervising and managing the logistics works in order to improve efficiency and service quality. There is only several staff in the logistics center and all logistic services are outsourced.

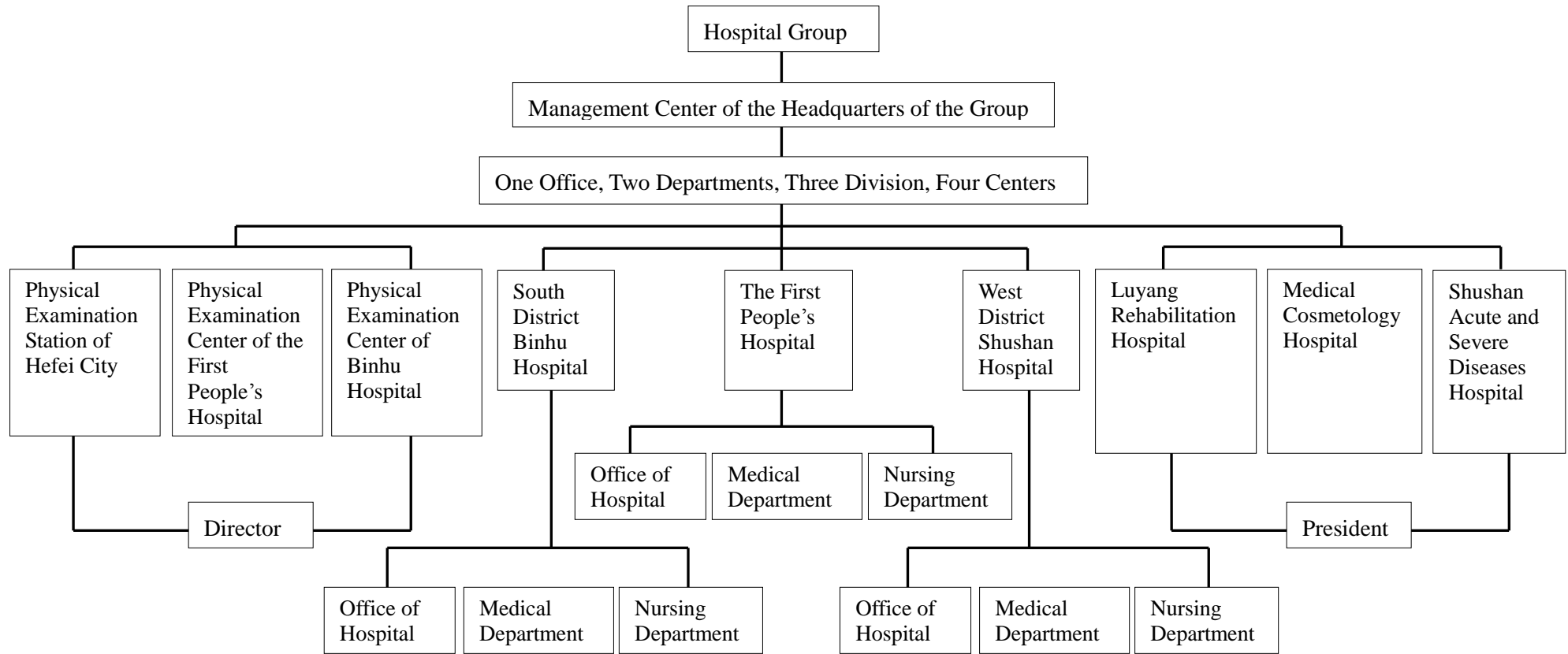
The group's management center in the headquarters is composed of six administrative departments and four business departments (Figure 6-3), which puts the group members in the closely-knit layer under integrated management in terms of

development planning, administrative management, medical management, asset management, fund operation, performance assessment, institution setting, material procurement, operation norms and appointment of cadres, personnel management, salary distribution, security and logistics support. The asset and equipments as well as medical information are shared and medical resources are reasonably distributed in this group.

#### **(4) Hospital Districts' Management**

Each district of the hospital group includes a permanent Office of Hospital, Medical Department and Nursing Department. The management personnel includes one executive president, one director of the Office of the hospital, one head of Medical Department and one head of Nursing Department. Besides, a number of office workers are sent to each district by the headquarters to handle the daily affairs and implement the decisions of the headquarters. The other management and business works will be handled by the management center of the hospital group.

Figure 6-3 Management Structure of the First People's Hospital Group of Hefei City



Source: the author.

### 6.1.3.3 Incentive Mechanism

The salary, which is composed of basic wage, post wage and performance related pay, is divided into four grades and 12 levels. The salary is adjusted according to working years and performance. Experts and mid-level managers with special contribution enjoy annual pay and special allowance. The “five social insurances and one housing fund” of employees are covered by the social security system.

In order to motivate the initiatives of the employees, the hospital group has introduced a special performance assessment system under which the performance of employees is evaluated in terms of service quality, workload, technical difficulties, work efficiency and patient satisfaction. In addition, the balanced scorecard, target management method, key performance indicators are also used to comprehensively evaluate the performance of departments.

The performance of doctors is assessed in accordance with the following formula: performance of medical team = team’s workload \* rewarding coefficient \* weight coefficient”.

The performance of nursing staff is assessed according to the number of beds he/she has served. The assessment items include quality (service quality), quantity (workload), difficulty (technical difficulties), efficiency (work efficiency) and degree (patient’s satisfaction), which has effectively tied the performance assessment to the work performance.

Administrative staff is also assessed accordingly. Through performance assessment, the staff’s enthusiasm is fully aroused to quickly and efficiently complete the monthly, quarterly and annual tasks, finally achieving the medium and long-term goals of the hospital group.

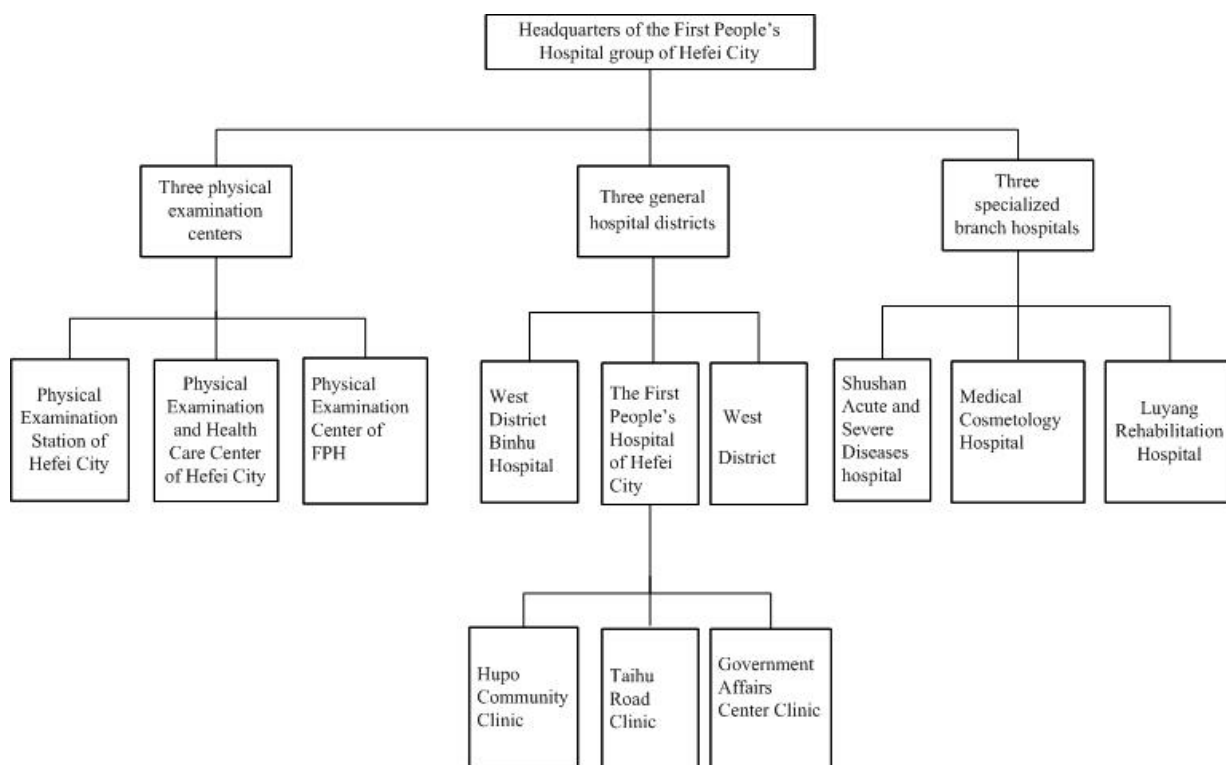
#### **6.1.4 Sustainable Competitive Advantage Based on Spatial Layout**

All the member hospitals of the First People's Hospital Group of Hefei City have become valuable, rare, inimitable resources that can be exploited by the group in terms of their geographical location, development scale and development direction.

After ten years of development, the First People's Hospital Group of Hefei City has evolved from a loosely-knit into a closely-knit group with about 20 members through reorganization, merger and acquisition. First, Binhu Hospital of Hefei City, covering an area of 200 mu with the construction area of 350,000 square meters and 2200 beds, was quickly put into use and is now running smoothly; second, the new ward building in Shushan branch of the First People's Hospital Group of Hefei City with the construction area of 15,000 square meters was completed and put into use. Meanwhile, the integrated management has been applied to the Shushan branch and Sports Health Center of Hefei City. On this basis, the two hospitals with complementary advantages form the west district of the First People's Hospital Group of Hefei City; third, the Hefei West District People's Hospital was merged and renamed as the Luyang branch of the First People's Hospital of Hefei City; fourth, the Medical Cosmetology Hospital of the First People's Hospital of Hefei City was established in the renovated Kangli building to diversify the medical services of the group; fifth, the group members are put under unified management of the headquarters hospital; sixth, the hospital group actively provides the medical services such as physical examination in community health centers.

Based on the Three-Ring planning layout of Hefei City and through the integration of medical resources, the hospital group has formed a comprehensive development pattern of healthcare integrating medical services, teaching, scientific research, health care and community medical services (Figure 6-4).

Figure 6-4 Layout of the First People’s Hospital Group of Hefei City



Source: the author.

### 6.1.5 Sustainable Competitive Advantage Based on Monitoring and Early-Warning Management

A hospital is a special organization that must run for 24 hours. However, hospitals are scattered around the city, which may delay treatment and threaten life in case of emergency. As a result, the People’s First Hospital Group of Hefei City created a monitoring and early-warning system.

#### (1) Monitoring Network

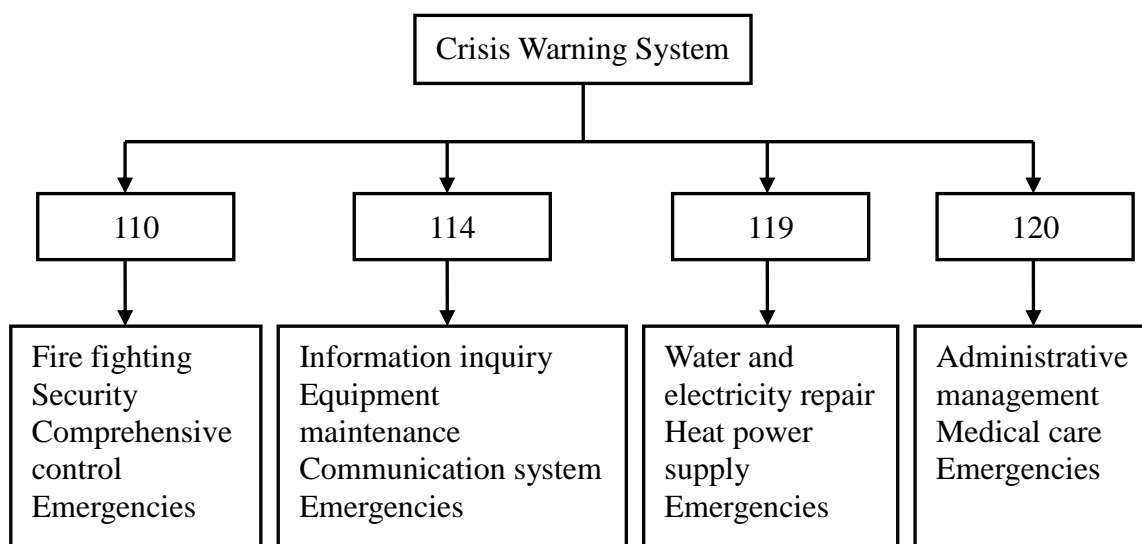
In order to ensure the safety of the hospital and the effective implementation of strategic plans, the hospital group has established three monitoring systems.

#### (2) Crisis Warning System

Emergency calls “110”, “114”, “119”, “120” are on service for 24 hours in all hospital’s districts for different kinds of emergencies including medical care, public

security, fire fighting, water and electricity repair and device communication to ensure the immediate handling of emergencies and the safety of patients.

Figure 6-5 Crisis Warning System of the First People’s Hospital Group of Hefei City



Source: the author.

### (3) Night Management System on Holidays

Each district has employees on 24-hour duty in the administrative department, medical department, nursing department, logistics department, security department and inpatient management department to immediately deal with emergencies reported from the Crisis Warning System. The executive president and deputy president in charge of medical insurance in each district make weekly ward rounds and the president on duty makes the ward rounds on festivals or holidays to ensure the implementation of different management measures and the safety of fire, water and electricity.

### (4) Supervision System

The group has established the Comprehensive Quality Supervision Committee to regularly and irregularly supervise the hospital’s medical ethics, medical services,

logistics support, labor regulations, security, fireproof and guard against theft, comprehensive treatment, sanitary environment and sanitation. The Committee exercises independent rights of supervision, inspection, evaluation and bonus-penalty. The supervision results will be publicized in the form of bulletin.

The three inspection systems effectively ensure the hospital management to be institutionalized and standardized and safeguard the immediate interests of the patients.

## **6.2 Achievements of the First People's Hospital Group of Hefei City**

If the establishment of the First People's Hospital Group of Hefei City can be attributed to the opportunities the hospital met and resources advantages it had, (see Chapter 5), then its success was not achieved overnight. Since its establishment in 2004, it took some time for the group to achieve remarkable success, which will be described below from the perspective of hospital, patients and government.

### **6.2.1 Establishment and Expansion of the First People's Hospital Group of Hefei City**

Since the founding of the First People's Hospital Group of Hefei City, the hospital's medical area has increased from 32 mu to 360 mu, building an area from 24,000 square meters to 400,000 square meters and beds from 800 to 3839 respectively. By the end of 2014, the total assets of the group had reached nearly 4 billion yuan from 385 million yuan, up to 3615 million yuan. The income volume also hits new highs accordingly (Table 6-1).



Table 6-1 Business Indicators of the First People's Hospital Group of Hefei City  
(2005-2014)

	Outpatient and emergency visits	Number of inpatients	Number of surgeries	Beds	Income (100 million)
2005	474671	27671	6783	793	2.96
2006	665807	33218	10869	980	3.12
2007	732467	36221	12378	1020	3.42
2008	903870	41331	13882	1113	4.04
2009	1179134	40367	13053	1130	5.12
2010	1498084	56436	17909	3893	7.3
2011	1680562	85787	20562	3893	8.5
2012	1659273	79732	21896	3893	10.1
2013	2026782	78284	20661	3893	11.1
2014	2148441	77651	20600	3893	11.89

Source: hospital official documents.

The outpatient and emergency visits and annual income have increased by 30 and 35% respectively. With the comprehensive strength constantly improving, the hospital has consolidated its position as the strongest hospital in the region.

Though formulating and implementing development strategies, the hospital group has made major breakthroughs. For example, through merging Shushan hospital of Hefei City and Hefei Workers' Sanatorium in the west region of the Hefei City, the hospital group extends its services to the administrative and cultural zone, Hi-tech development zone and Tech City. Then, it invested 1.8 billion yuan (approx. 245 million euro) to establish the Binhu Hospital covering an area of 200mu with 3600 beds in the Binhu New District, in an effort to expand its medical market in the economic and technological development zone in the South of Hefei City, Baohe District and Binhu District; further, it began to upgrade the headquarters of the First

People's Hospital of Hefei City in the north district to consolidate its medical market in the north area of the city. The hospital expanded not only in space but also in different dimensions. After the west, south and north districts were established, it also set up medical service centers in the east, south, west and north of the city. Through expanding development space, gaining larger market share and extending its coverage of medical services, the development of the hospital has entered a new stage.

The hospital group provides a broad range of medical services, including emergency treatment, rehabilitation, physical examination, pre-hospital intervention, community healthcare, combination of health preserving and medical treatment and medical services for the elderly.

The sharing of talents, technologies and equipment among the group members has rendered full support to the technological progress, management improvement and talent cultivation. The expanded hospital scale and reputable brand have attracted many talents. The first academician workstation established by the hospital in Anhui province had attracted many academicians. With more academicians and national-level talents joining the hospital, the hospital's medical technologies have been improved. In addition, the sharing of high-end equipments has improved their utilization rate and avoids repeated purchasing. Thus, the hospital group has built a closely-knit network where the group members can mutually benefit through cooperation, which has greatly improved the overall quality of medical services and rapidly spread the cutting edge medical technologies among the group members

The hospital group improved its academic and research level in two ways: first, introduce talents and cultivate its own talents; second, integrate the current advantageous academic resources and bring them into full use. As the scale of the group becomes bigger, each subject has a new development space. In accordance with the international standards, the original 17 clinical subjects were subdivided into 42 subjects at four levels.

### **6.2.2 Relief of patient's burden.**

The ultimate goal of health reform is to bring benefits to the patients. Through establishing a hospital group, the First People's Hospital of Hefei City has achieved the goals of reforming internal management system, downsizing staff, saving cost, reducing investment and consumption and eliminating waste. Through unified management, procurement, inventory, deployment and services, the hospital can operate at low cost and low risk. In addition, when medical costs are reduced thanks to the unified management, patients' medical expenses, especially the medication and examination expenses can also be reduced accordingly.

Meanwhile the sharing of medical technologies and human resources among the group members has improved the overall medical service quality and medical technologies of group members so that the patients can enjoy the one-stop high quality medical services and directly benefit from the advanced medical technologies.

Through combining the health management with pre-hospital intervention and establishing two-way referral system between large hospitals and grass-root hospitals like community hospitals and county hospital, the integrated medical services of the hospital group has reduced medical risks and ensured the medical quality aiming at the satisfaction of society, patients and people.

### **6.2.3 Relieve the government's pressure in healthcare reform**

Through merging different medical organizations in different places in Hefei City, the closely-knit hospital group has effectively promoted the flow of high-quality medical resources and brought idle and rarely used equipment in grass-root hospital into full use. In addition, the government has activated the stock of scattered medical resources and put them under unified management without increasing its spending in healthcare, which makes the distribution of medical resources more reasonable and satisfies the healthcare needs of different groups of people.

When medical resources are limited and used inefficiently, the hospital group actively assumes the government's function to promote the development of county and township hospitals. Through two-way referral system, the hospital group transfers the patients with minor diseases to the small and medium-sized hospitals so that the grassroots hospitals can be brought into full play. Thus with less investment from the government, good results have been achieved.

By effectively using the brand resources of the core hospital, the hospital group rendered full support to the weak links and activated stock resources, improving the medical conditions of group members and equipment efficiency and increasing their competitive strength. The reactivated health resources and improved utilization rate of health resources have saved the government's spending in healthcare. Meanwhile, when the scattered resources are integrated and put under unified management, the distribution of health resources become more reasonable. Under these circumstances, people will enjoy better medical environment and a wider range of high-level medical services.

## **Chapter 7 - Influencing Factors of the Development of the First People's Hospital Group of Hefei City and Countermeasures and Suggestions**

The consolidation of public hospitals in China is necessitated by the new medical reform. In this Chapter we analyze the influencing factors of the development of the First People's Hospital Group of Hefei City and, based on the present situation, propose some measures and volunteer some suggestions.

### **7.1 Factors Affecting the Development of the First People's Hospital Group of Hefei City**

The development of hospital groups in China has no established model to copy and no successful experience to learn, so there is great space for its exploration and development. During the process from infancy to maturity and from loose type to closely-knit type, the First People's Hospital Group of Hefei City constantly solved the problems it encountered in the implementation of the development strategy. Overall, the development of the hospital group was (and is) affected by the following factors.

#### **7.1.1 Influencing factor 1: No clear legal status**

In China, the specific measures for the public hospital reform lack policy support. Meanwhile, the organization certification and property right ownership also lack relevant legal basis. As explained below, unclear property right relations and lack of check and balance mechanisms have affected the healthy development of hospital groups. The problems include how to define the legal status of a hospital group,

administrative departments and managers; how to clarify the relationships between group members; how to straighten out the relations of different management systems of the hospital group; and how to link up the patients' referral between medical organizations at different levels with the current medical insurance system.

For instance, *the Guidance on the Pilot Reform of Public Hospitals* (Ministry of Health, State Commission Office of Public Sectors Reform, National Development and Reform Commission, Ministry of Finance and Ministry of Human Resources and Social Security of the PRC, 2010) issued by the five ministries including the Ministry of Health of the PRC only gives opinions on the reform of public hospital's management system, corporate governance mechanism, internal operation mechanism and compensation mechanism, but provides no specific implementing rules. Because of lack of clear legal status and supporting policies, the group members of the First People's Hospital Group of Hefei City cannot be effectively integrated. Meanwhile, because the health administrative department fails to formulate the explicit supporting policies regarding the personnel and medical insurance for the whole group, the problems of assets such as personnel, property and lands cannot be effectively solved. All these have partly limited the development of the hospital group.

### **7.1.2 Influencing factor 2: Unclear property rights**

Currently, the public hospitals in China are still subordinated to the health administrative department. With government playing the dual role of administrator and operator, the hospitals are not the transferee or transferor in merger and acquisition activities; the compensable transfer of hospital assets is not the transfer of property rights but the transfer of assets; the transferor is not the manager and the shareholder, but the hospital itself; the transfer of hospital's assets and M&A must be approved by the health administrative department. The ownership of assets is not clearly defined after a hospital is restructured and merged into a hospital group. Because of unclear property rights, public hospitals are subject to many restrictions in

the capital operation. As stated before, the First People's Hospital group of Hefei still relies heavily on the government but the government has no clear assessment requirements for hospital management objectives. The president as the legal representative assumes the overall responsibility for the hospital operation but whom he/she will report to is not clearly defined, usually resulting in overlapping management. The unclear property rights and improper role of health department will lead to the low efficiency of resource allocation, low utilization rate of resources and lack of competitive advantages. According to the hospital's statistics, the First People's Hospital group of Hefei city is generally inspected or investigated by different administrative departments for more than 400 times each year and therefore the hospital leaders have to spend a lot time to deal with these inspections, diverting them from the group development.

### **7.1.3 Influencing factor 3: The conflict of interests and culture clash between group members that hamper the development of the hospital group**

The Chinese government pursues hospital regrouping for the purpose of controlling the total volume of health resources and optimizing the incremental volume, while the medical organization establishes the hospital group in the hope of gaining bigger market share and reducing costs through scale effect in order to maintain sustainable development under the condition of insufficient input from the government. When the government merges hospitals with poor benefits and profitable hospitals together through administrative orders, some weak members always wait to receive aids from the core hospital instead of taking initiatives to generate profits and cut down costs, which greatly hinders the development of the core hospital. Meanwhile, the core hospital has to pay for more employees and thus gets increasingly overburdened. Further, the difference between the group members in values, behavior norms and management methods also make it difficult to form a unified hospital culture in short time, thus hampering the group's development. In

addition, because the employees from different group members vary considerably in education level and professional skills, it is difficult to reassign posts for them.

#### **7.1.4 Influencing factor 4: Group members in loose layer now exist only in name**

The First People's Hospital Group of Hefei City was initially organized in a loose form whereby the group members remained independent in assets and operation. The core hospital only exported its brand, management and technologies to its members. Meanwhile, the group members were loosely linked and occupied the market with the help of the group's brand advantage. However, because the profit distribution and responsibilities were not clearly defined, the group members lacked a basis to form a community of interest. Therefore, the loosely-knit group with poor cohesion cannot effectively improve the operating efficiency and core competitive strength. Then the First People's Hospital Group of Hefei City began to restructure itself into a closely-knit group by integrating most of its members into the closely-knit layer while leaving the rest in loose type. With little support from the core hospital in management and technology, the members in loose layer currently exist only in name.

## **7.2 Suggestions for the development of the First People's Hospital Group of Hefei City**

After more than ten years of development, the First People's Hospital Group of Hefei City now became one of a few hospital groups that is operating well in China. Affected by many factors during its development, the group has experienced setbacks and accumulated experience. According to the existing problems of the group, some suggestions are put forward as follows.

### **7.2.1 From the perspective of the government**

#### **7.2.1.1 Adjust the government's role and function**

After many years of development, the hospital consolidation in China is still at



the exploration stage. In order that the consolidation of China's hospitals can progress smoothly, the government should change its role from operator to administrator. The government should not interfere with hospital operations but focus on policy-making and macro-control and supervising and evaluating the hospital's performance. Hospitals should be given more autonomy in personnel and financial affairs. Meanwhile, competition mechanisms should be introduced into the medical market and market players should be responsible for their own profits and losses. Specifically, the government should focus on performing the administrative functions such as health planning, qualification approval, standards setting and supervision, while the hospital group should be mainly responsible for the reviewing and planning of the major issues of group members, and approving the important issues such as medical service, subject construction and operation management. In addition, the hospital group should be established according to market need instead of government's administrative orders.

#### **7.2.1.2 Strengthen support in policies and regulations**

The establishment and development of hospital groups need the support of government's policies. The government should give macro guidance and formulate relevant policies and regulations for personnel, medical insurance system, asset management, financial issues and service prices. The government, especially the health administrative departments should lead an effort to carefully study the consolidation of hospitals and put it on the agenda. They should focus on the following issues: clarify the legal status of hospital group; separate ownership from management; establish an incentive and constraint mechanism in which the decisions, implementation and supervision can mutually check; solve the existing problems faced by the hospital group in personnel system, assets and lack of supporting policies; provide legal basis for registered doctors' multi-site practice so that they can work for more than one medical organizations (e.g. hospital group, community clinic) to realize resource sharing and make full use of medical talents.

### **7.2.1.3 Transform the old mindset**

The government should strengthen its efforts to help the hospitals establish the market concept and management concept and cultivate awareness of competition and efficiency so that they can fully realize the consolidation development is an effective way to rationally allocate and make full use of health resources, enhance comprehensive strength, reduce business risk and adapt to the need of health reform.

### **7.2.1.4 Increase investment**

The government should increase input to support the establishment and development of the hospital group, provide favorable external environment, guide the hospital group to embrace correct values and strike a balance between making profits and fulfilling social responsibility. Besides, the government should strengthen supervision over the hospital group through industry supervision, internal supervision and social supervision.

## **7.2.2 From the perspective of hospital groups**

### **7.2.2.1 Clarify the ownership and clearly define the identity and status of public hospital group**

Clarifying the ownership relation is an important and difficult issue in the public hospital consolidation reform. If the hospital group is assembled by government-funded hospitals, then the hospital group is fully owned by the state. If the public hospital consolidation is sponsored or led by social capital, then the ownership should be rigorously clarified and meanwhile it is expected that the public-private hospital group can generate an effect far greater than the simple summation of both. The group should exert strong control over its group members through strengthening asset ties and give full play to the strengths, technologies and brand advantage of the core hospital and other group members. Through establishing horizontal and vertical assets network within the group and clarifying respective

responsibilities, rights and benefits of group members, the hospital group can become a real community with shared interests and cohesiveness.

#### **7.2.2.2 Put emphasis on hospital group's social responsibility**

To provide high-quality, convenient and affordable medical services, and try to improve the health of people is the social responsibility of public hospitals. The hospital group must strike a balance between generating profits and fulfilling its social responsibility. The hospital group should not only actively seek government's support for policies and funds but also take good advantage of the favorable opportunities to expand the medical market and promote the hospital group brand image so that the hospital group can maintain healthy development. In terms of internal management, the hospital group should control the treatment price of single disease to reduce the medical expenses of the patients. The centralized purchasing of drugs, equipment and materials through open bidding can significantly reduce the hospital cost and patient's expenses.

#### **7.2.2.3 Boost the overall performance of the hospital group**

The separate operation of group members in different places increases business risk. In order to increase the competitive strength of the hospital group, the group should establish a new performance assessment system by combining financial indicators with non-financial indicators, market evaluation with internal evaluation, and outcome assessment with process assessment. Meanwhile, from an overall strategic perspective, the group should reasonably organize and coordinate, and evaluate the internal and external benefits and short-term and long-term benefits from multi-dimension and multi-levels to promote all employees to improve their performance.

#### **7.2.2.4 Pay attention to cultivating high-quality management team**

The hospital's survival and sustainable development depends largely on the effectiveness and ability of hospital management. Therefore, the hospital group

should put particular emphasis on cultivating qualified hospital managers with an expertise in hospital management law, medical knowledge, hospital operation and relevant laws, and less input with more gains. The senior managers should thoroughly understand the conditions of nation, region and the hospital and accurately grasp the market information and the foreign and domestic medical information, take suitable measures to develop the group, give full play to the key departments and improve the competitiveness of the hospital group.

### **7.2.3 From the perspective of hospital group members**

#### **7.2.3.1 Improve the hospital group's internal management and operation mechanism**

The operation of hospital group requires new management philosophy, high-level managers and new management model. Different from the single hospital, hospital group is a medical conglomerate assembled by hospitals with different scale and level in different areas, and therefore how to improve the hospital group's internal management system and operation mechanism has become the core issue after its establishment. First, the top administrative department should be established to formulate a healthy management system according to the actual conditions and coordinate the business activities of group members. The governing body, business management units and supervision departments should be put under unified management. Second, clarify the strategic goal of the hospital group, correctly formulate development strategies and reasonably allocate human resources and financial resources, establish reasonable organizational structure and performance assessment system, implement scientific performance-based salary system, optimize management process and constantly improve hospital group's management level.

#### **7.2.3.2 Highlight the distinctive features of group members**

Because each group member operates in an internal and external environment different from others, there is no universal reform mode for all of them. The hospital

group should adopt different development strategies for different hospitals (e.g. general hospitals and specialized hospitals) according to their distinctive characteristics and strengthen their unique competitive advantage. With the original characteristics and human resource advantage as the basis, the group members should copy the characteristics of the core hospital; meanwhile the hospital group should restructure business unit by integrating similar resources of group members in order to provide standard and professional medical services.

#### **7.2.3.3 Control the group's scale**

Bigger is not always better, therefore the scale of the hospital group cannot be expanded infinitely. When building a hospital group, the organization costs, opportunity costs, resource value and income level must be considered. Meanwhile, the core hospital should identify its competitive advantage, carefully choose the group members and appropriately control the group's scale.

#### **7.2.3.4 Explore new type of medical service management models**

##### **(1) Unify subjects planning**

The hospital group should plan the functional roles and subject construction of group members in a coordinated way, optimize the allocation of existing medical resources and lay solid foundation for hierarchical medical system.

##### **(2) Consolidate business management**

Explore new methods to make the drug catalogues of group members mutually compatible. The hospital group should regularly check and supervise the medical service quality of group members to ensure the group's overall medical quality and service level is constantly improved.

##### **(3) Allocate resources in a coordinated way**

Establish reservation service information platform and implement unified reservation service system; integrate the existing medical resources of group members and plan to establish clinical examination center and screening and diagnosis center;

implement unified quality standards; on the premise of medical safety, expand the mutual recognition of medical examination results among group members in different region in order to reduce the repeated examination.

### **7.3 Summary**

This chapter is divided into four parts. First, the advantageous resources of the First People's Hospital Group of Hefei City are analyzed; second, the results achieved have been presented; third, factors affecting the development of the hospital group are discussed; finally, suggestions for existing problems of the hospital group are put forward.

First the chapter describes the competitive advantages of the hospital group. In terms of the hospital group, the group's scale and business volume have significantly increased, the medical market and scope of medical services have been expanded and the subject construction and medical level have made remarkable progress. Meanwhile, the medical conditions of group's members and the utilization efficiency of equipment have been improved, and the competitive strength is enhanced. In terms of government, it has activated the stock health resources and improved the resource utilization rate without increasing input. At the same time, the scattered resources have been integrated and put under the unified management and the distribution of medical resources becomes more reasonable. Thus, patients can enjoy better medical environment and a wider range of high-level medical services. This has partly realized the objective of reform of public hospitals by providing better medical services for patients.

With the development of information technology and facing the increasingly complex competitive environment, organizations have to turn their eyes from external market environment to internal environment and lay stress on accumulating unique resources and knowledge technologies to form a unique competitive force. The external resources that help to materialize the First People's Hospital Group of Hefei

City have been described in Chapter Four and will not be repeated here. All of them are unique resources that guarantee the First People's Hospital Group of Hefei City to maintain sustainable development and sustain competitive advantages.

The third part analyzed the unfavorable factors that hinder the development of the hospital group. Based on the resource-based theory and from the perspective of resources, this Chapter analyzes the hospital group's competitive advantages and adverse factors affecting the development of the group. Finally, suggestions were put forward. According to the analysis, the advantageous resources that can help maintain the group's comprehensive competitiveness are characterized by being competitive, market-related, long-term, durable and good for further development.

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## **Chapter 8 - Research Conclusions**

### **8.1 Research conclusions**

#### **8.1.1 Hospital consolidation is required for the sustainable development of public hospitals**

The key of health services entering the market is how to further improve the utilization efficiency of medical resources, while optimizing resources, reducing costs and improving efficiency are the important ways to reorganize medical resources. Then the hospital consolidation is undoubtedly the main form and operation mode of reorganizing medical resources. The analysis of development trend of hospitals both at home and abroad shows that hospital consolidation is the mainstream development direction of public hospitals and thus has become an important content and strategic measure in the reform and restructuring strategies of public hospitals in China. Therefore, we should seize the opportunities and unswervingly push forward the consolidation process of the First People's Hospital of Hefei City.

#### **8.1.2 The core hospital should play a leading role in the development of hospital group**

Having a strong hospital as the core of the First People's Hospital Group of Hefei City can offer great advantages. Due to its good infrastructure, superior geographic location and convenient transportation, the First People's Hospital of Hefei City is very attractive to patients. Meanwhile, the hospital is the designated medical care hospital, has good ability to withstand market risks, and enjoys good social reputation and public image and is thus capable of playing a leading role in the consolidation and reform of public hospitals. The brand image and technological

advantages can help the group to attract patients and further improve the group's overall competitiveness. Therefore, whether it is measured from the view point of hard power such as medical infrastructure and high-end equipment or soft power like brand image and technological advantages, selecting a large public hospital like the First People's Hospital of Hefei City as the headquarters hospital of the hospital group can show obvious advantages. By giving full play to the resource advantages of the First People's Hospital of Hefei City in management, talents, specialty, technologies and information, as well as its good brand effect, group members may be helped to standardize management, strengthen the construction of talent teams and medical quality control system and reduce medical costs, thus realizing the scale development of the group and maximizing the utilization of the quality medical resources.

### **8.1.3 Hospital group should speed up the transition from loose type to closely-knit type**

Most hospital groups have experienced the transition from loose type to closely-knit type, as has the First People's Hospital of Hefei City. When the group was established in early 2004, most member hospitals are actually loosely connected so, despite a large size, the hospital group cannot reach economies of scale. The loose group model is only a transitional model for medical reform. Such kind of hospital group formed by simply grouping several hospitals has increased the management levels and difficulties and therefore the operation flexibility and the management efficiency cannot achieve the desired result. The sustainability of hospital development is challenged by not focusing on strengthening management to gain social and economic benefits. In response, the First People's Hospital Group of Hefei City stepped up efforts to reform its internal systems, reorganize the mature loose members and put the personnel, assets and materials of the group members under unified management. By transitioning towards the closely-knit type, the group has optimized the allocation of medical resources. Clarify the rights, obligations and

responsibilities of all parties and reasonably determine the functions of medical institutions at various levels; by putting the assets, medical staff and business under the unified management, the hospital group will establish a stable and close cooperation mechanism and further form a responsibility and interest community, which is the precondition of establishing a hierarchical medical system with coordinated efforts by core hospital and group members.

#### **8.1.4 Properly handle the relationship between centralization and decentralization**

Hospital group is a medical consortium consisting of a host of hospitals with different organizational cultures, nature and development experience. Although the hospital group is not a legal person and thus does not qualify to independently assume civil responsibilities, member hospitals must be subject to the mandatory unified management of the group. By putting the affiliated hospitals under unified management, guidance and coordination, the First People's Hospital of Hefei City has maximized the utilization of medical resources. Meanwhile, affiliated hospitals are allowed to deal with general affairs under authorization, including some approval rights and the purchase of some materials. Group members independently operate and keep separate accounts and the headquarters hospital only makes decisions on major issues. In this way, the overall operation efficiency of the group has been greatly improved.

#### **8.1.5 The development of the hospital group should be in line with the local conditions**

The asset reorganization, cross-region merger and system reforms in the process of consolidation must be conducted in line with the macro policies for state institutions and local regulations and laws. During the consolidation, the group should merge the hospitals requiring lower acquisition cost. When making decisions, the

hospital group should give full considerations to the costs and benefits and expand the scale with low costs. The group cannot merely pursue the increase in size while ignoring the quality, which may happen if the member hospitals are mechanically grouped together. When the economic benefits and personnel structure of a group member has met the standards, the group can integrate it into the closely-knit layer. The medical resources should be rationally allocated among the group members so that the hospital group can operate with high efficiency.

## **8.2 Research limitations and prospects**

Although the researcher has put considerable time and energy into the study, there are still many research limitations. With the First People's Hospital Group of Hefei City as the research object and a single case study, the research results are not universally valid everywhere and cannot be generalized because of the characteristics of its geographic location and its own development.

Future studies may make a comparative analysis of public hospital groups of different sizes in different areas in order to further understand the reasons for the success and failure of the cases studied. To this end, more resources and data are needed in order to better grasp the consolidation process of public hospital groups in China.

## **8.3 Chapter summary**

As part of public hospital reform in China, consolidation is an effective and low-cost solution to problems such as unreasonable allocation of medical resources and the contradiction between people's ever-growing needs of medical services and shortage of supply. Hospital consolidation can offer the following advantages: solve the problem of funds shortage; avoid duplication in the construction of different hospitals; make up for the service deficiency in some hospitals and effectively use

idle resources; and reduce the costs of personnel, assets and materials. But it is not without risks, so hospital consolidation should be treated with caution and prudently pushed forward. A review of the development history of hospital groups shows that most of them are initially triggered by strong hospitals with the group members being loosely connected. However, in a loose structure, property rights remain independent as well as the management system and the legal status hindering the efficient operation of the group. In order to reach such efficiency, hospital groups should gain the support of stakeholders, establish sound leadership systems, set up an organ of power, improve regulations and properly coordinate the interests among the members while conducting active and useful research.

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