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The Hong Kong Polytechnic University

The Department of Building and Real Estate

Competitiveness for real estate developers: a China study

Xiaoling ZHANG

**A thesis submitted to in partial fulfilment of the
requirements for the Degree of Doctor of Philosophy**

October 2010

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DEDICATION

To those love me & I loved

ABSTRACT

The importance of organizational competitiveness and competitive strategy has led to the contribution of extensive research efforts to the development of this research discipline. It is essential for the organizations in a vibrant business environment such as the Chinese real estate industry to understand their competitiveness and hence identify the strategy for improvement.

China has been experiencing comprehensive reform programs across all industrial sectors including real estate. The implementation of this reform process has brought the growth of various industries such as real estate industry and the huge development of the national economy as a whole. In particular, the Chinese real estate industry as a new industry has grown up dramatically over last two decades. In line with the reforms and developments, the Chinese real estate market presents not only huge business opportunities but also various special characteristics at both industrial and business levels. Developers in the industry are from multiple backgrounds, including domestic firms, joint ventures, and foreign businesses. Their competitiveness and competition strategy are determined by different types of variables in this environment. It is important that developers in this market properly understand their competitiveness and therefore adopt adequate strategies for improvement. The healthy development of developers' business not only contributes to their own business objectives but also to the smooth development of the Chinese real estate industry as a whole.

Nevertheless, there is little research undertaken on examining real estate enterprises' competitiveness and the strategy for competitiveness improvement in the Chinese real

estate market. It is the aim of this study to understand the enterprises' competitiveness and investigate strategy for competitiveness improvement in the context of the Chinese real estate industry. The characteristics of the Chinese real estate business at both industrial and business level are identified. A comprehensive set of competitiveness indicators is developed for helping assess real estate enterprises' competitiveness, and core competitiveness indicators are identified for business start-up and growth stages. In order to identify the Core competitiveness indicators (CCIs), this study extends the traditional questionnaire survey data analysis approach to using Monte Carlo Simulation technique and Fuzzy Set theory to establish CCIs. This mitigates the weakness of the traditional methods for identifying CCIs from questionnaire information. The identification of the CCIs indicates that developers at start-up stage are indifferent to what are the key competitiveness areas thus they consider almost all areas important. However, developers start to realize the importance of focusing on few areas after they consolidate their business start-up stage, thus they select less core indicators as core competitiveness areas, much less than that selected when they just enter into the market. The 6 CCIs are considered essential to present a developer's competitiveness in the Chinese real estate market, including annual land reserves, corporate brand reputation, access to a diverse range of capital, entrepreneurship opportunity, superior strategic management capacity, risk management capability (response to policy and system changes), and green development strategy to gain the reputation of social responsibility. Core competitiveness indicators (CCIs) are identified for helping the enterprises to focus their resources and strategies on the key areas for enhancing their competitiveness. The analysis on the core competitiveness indicators leads to the formulation of two

major strategies for competitiveness improvement, namely, risk management and green development.

The study shows that risk management and green development strategies are proven effective to enhance developers' competitiveness. The results also show that different types of enterprises will obtain competitiveness in different aspects by utilizing their own organizational resources and strengths. This implies that individual real estate developers should formulate competition strategies through analyzing their own competitiveness, considering the external environment, utilizing internal resources properly, and therefore assessing all feasible strategies for management decision.

This study has adopted multiple research methods, including extensive literature review, a systematic process of practical surveys, Monte Carlo Simulation technique, fuzzy set theory method and case studies. The data collected from the survey within the Chinese real estate context are used for establishing CCIs, formulating and validating the strategies for competitiveness improvement. Whilst the data used in the analysis are collected from the Chinese real estate industry, the findings provide useful references for conducting comparative studies between China and real estate industry in other countries. This study contributes to the development of knowledge of competitiveness theory in the discipline of real estate industry. The limitations of the study are appreciated, including the limited sources of the data collected only from China's real estate market.

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CHAPTER 1 INTRODUCTION

CHAPTER 1 INTRODUCTION

This chapter addresses the background, objectives, methodologies and significance of the study. The chapter ends up with an overview of the structure of the thesis.

- *1.1 Background of the Research*
- *1.2 Research aim and objectives*
- *1.3 Scope of the Research*
- *1.4 Significance of the Research*
- *1.5 Research Methodology*
- *1.6 Organization of the Thesis*

CHAPTER 1 INTRODUCTION

The study of ‘competitiveness’ has been well addressed in the discipline of management theory among decision-makers, organization managers, economists, industrialists and politicians for years. Identifying and improving continuously the competitiveness for organizations have become a major area of concern as the competition environment for business is diversified and dynamic. This study is carried out for studying the core competitiveness for real estate firms in China. The research is focused on two key elements: the core competitiveness indicators for measuring real estate firms’ competitiveness in the Chinese real estate business environment, and the key strategies for improving the competitiveness. This first chapter of the thesis describes the background of the research, defines the research scope, sets out research objectives, and presents the research methodologies. The chapter ends by highlighting the structure of the thesis for providing a roadmap for the reading journey through the whole thesis.

1.1 Background of the Research

1.1.1 The Role of Real Estate Industry

Real estate industry is the key economic sector and has substantial impacts to kick-start the economy particularly in these developing countries such as China. There are strong systemic linkages between real estate industry and other industries such as construction industry, construction material industry, home decoration, electrical appliances, finance, transportation and others. This position the real estate industry into a major economic driver of domestic economies at all levels of development. The real estate sector in China contributes largely to the gross domestic product (GDP). In 2005, Premier Minister Wen Jiabao stated in his State Council Report that the healthy

development of real estate industry was one of the seven key tasks of the Chinese central government. A recent study (Liu, 2010) shows that 5.82% of the GDP in China is contributed by the real estate sector in the year 2007, and this contribution is expected to grow in the coming years.

The Chinese real estate industry has been driven by fast urbanization process. With the speeding up of urbanization advancement in China, a huge number of real estate buildings have been produced in recent years, which has greatly heated real estate market. In the view of Joseph Stiglitz, a Nobel Prize Economics winner, “the urbanization in China and the high-tech development in the United States will be the two keys to influence the human development in the 21st century” (People’s Daily Online, 2005). According to China Statistic Yearbook (2007), there were 2652.94 million m² average floor space under construction in 2000, and the figure reached to 3317.77 million m² in 2006. The urbanization rate in China has risen to 46.6% in the year 2005 (World Bank, 2009). The market will continue to grow. It is expected by World Bank (2009) that in the future 20 years, the urbanization level in China will increase to 66%, and the average annual urbanization rate would increase by 1.5%. It can be expected that urban population will increase dramatically. According to the Statistical Yearbook of China (2003), the annual new construction area for real estate demand by the new urban population would be 500 million m², which highlights the huge real estate market in China, including massive program of residential buildings, office buildings, commercial buildings, industrial buildings, and urban infrastructure construction cluster features (Jiang and Jin, 2003).

1.1.2 Importance of Competitiveness for Real Estate Firms

Whilst real estate industry plays a significant role in the Chinese economy and it is the governmental strategy to further develop the industry, there are changes and uncertainties in the market, which bring both opportunities and challenges to real estate firms in the Chinese real estate market. In particular, the China's accession to the World Trade Organization (WTO) in 2001 marked the beginning of a new era of Chinese real estate markets opening-up to the world. This development benefits the Chinese domestic real estate firms from participating more actively and freely in international real estate markets. In fact, increasing number of Chinese real estate developers has started to operate overseas business. For example, China Overseas Property has been undertaking major property development projects in a number of Middle East cities such as Dubai. Therefore, the Chinese real estate market is increasingly playing important role in the international real estate market, thus the healthy development of the Chinese market will make contribution to the development of the industry as a whole.

On the other hand, the opening of the Chinese real estate market has attracted increasing number of overseas investors to the market. For example, by the end of October 2006, the number of foreign real estate entrepreneurs in Shanghai accounts for 7% of the city's total number of real estate enterprises; and their registered capital accounts for 27% of the total registered capital in the local real estate industry (Zhang, 2007).

In this context, the intensity of competition in the Chinese real estate market has increased. Thus the profit margin of real estate developers in China has been squeezed. Many real estate developers have been struggling for survival, and some of them have

been forced to exit the market. In 2007, the number of real estate enterprises in China decreased by 39.8% compared to 2006 (China Real Estate Statistical Yearbook, 2008). As a result, identifying the competitiveness and undertaking strategies for competitiveness improvement has become a major concern for real estate firms in China, where the business environment is very dynamic. In line with this, it is important to help the real estate firms in China to develop healthily by understanding their competitiveness and taking due strategies to improve their competitiveness.

1.1.3 The Dynamic Environment for Real Estate Business

The business environment for real estate firms particularly in those developing countries such as China is very dynamic. Nevertheless, whilst the fast urbanization process in China mentioned above provides good opportunities for real estate firms, it also brings about the overheated real estate market. The government therefore has been introducing various measures to control the overheated market, leading the market very dynamic. In this context, the real estate firms need to adapt themselves to the dynamic environment by identifying their competitiveness and taking due strategies to improve their competitiveness.

On one hand, changes occurred within internal environment as organizations pass through distinctive stages, each with its own characteristics, as they develop (Scott and Bruce 1987), and it is the same with real estate firms. On the other hand, there are changes in external environment as industrial, social, economic, political and other external dimensions change.

In the internal environment, the dynamic nature of the Chinese real estate business environment is contributed by the development of the business activities on the real estate value chain, for example, the changing needs by clients, the development of

multiple functions of projects, the changing construction technology environment, the development of new construction materials. A real estate firm usually starts with a simple business organization and experienced several development stages. When the developer enters into different stages, the internal organization form, resources, capabilities and mechanisms will change accordingly (Scott and Bruce 1987).

In the external environment, real estate industry in China has enjoyed fastest changes and development in global real estate market (Han, 1998). Since 1978, the Chinese government has reformed its land administration and real estate systems as a part of a nationwide economic restructuring program. In the past 30 years, a series of reforms have been introduced in land supply, private ownership of property, taxation, finance and real estate regulations (Choi, 1998; Hinton and Tao, 2006). In the process of promoting real estate industry, the Chinese government has been introducing various laws and regulations for guiding the development of industry. Typically, in 1998, the Chinese government declared to abolish the old welfare house system (State Council, 1998) and announced that property user should be granted with land use right. Various laws and policies regulating the practice of real estate business activities have been issued accordingly, concerning the aspects of land title and supply, urban planning, environmental protection, real estate pre-sale and sale, land acquisition and finance, property management, title transfer and registration (Wang and Murie, 1996; State Council, 1998; Lou and Palomar, 2006).

These reforms have induced various changes in the Chinese real estate market, making the market environment very dynamic. There are three most significant changes, namely, the change of project finance from traditionally governmental free allocation to commercial loan; the change of the land acquisition from governmental free allocation

to competitive tendering, and the change of the housing distribution from welfare system to commercial housing. The practice of housing commercialization has promoted the development of various types of real estate developers in the Chinese real estate market, including state-owned, collective-owned, and sino-foreign joint venture developers.

Therefore, these two-dimension changes (internal and external environmental changes) result in further study, which assumes that various competitiveness indicators will be different across their different development stages. This further demonstrates the significance of identifying the competitiveness for real estate firms in such dynamic business environment.

1.1.4 Statement of Research Problems

The key research problem to be addressed in this study is how to identify the core competitiveness indicators for real estate firms in the Chinese real estate market and what key strategies for competitiveness improvement. The above discussion shows the dynamic nature of the real estate business environment in China. In order to adapt to the dynamic environment, it is essential for the real estate firms to develop a method for identifying their competitiveness. There is a need for establishing a set of competitiveness indicators for measuring the competitiveness.

Previous research works have been conducted in developing various tools for examining real estate organizational competitiveness. For example, Porter (1989) presents two critical factors affecting real estate business' competitive advantage, including lower cost and differentiation. He opined that the real estate company can achieve lower costs across many processes, including finance and delivering a project. Development with lower costs allows developers to get a higher margin at prevailing

price. Differentiation strategy is the ability to have some unique skills or resources that allow an organization to command a premium price. Adas (2002) presents a model for helping homebuilding firms identify unique resources across organizational key areas such as management systems, techniques, training and staff development, and organizational structure. Guo and Zhang (2003) opined that unique nature in human resource, capital, house product, custom service and brand is the key in cultivating core competence. A recent study by Li *et al.* (2009) suggests that the developer's unique financial competency, market coverage and management competencies are vital to its competitiveness.

It appears nevertheless, that there is little study for investigating a set of indicators for measuring organizational competitiveness in real estate business environment with reference to China. The proper analysis on competitiveness indicators will help a firm in the Chinese real estate market to know whether it has competitive advantage over its competitors within the business environment. The results from this study can therefore provide valuable information for organizations to make decisions on identifying competition strategy and applying adequate strategy to improve their competitiveness.

1.2 Scope of the Research

The scope of this study is defined in the field of competitiveness identification and key strategies for competitiveness within the Chinese real estate market. Figure 1.1 illustrates the different levels of research on competitiveness. From the base to apex of the pyramid, four levels of competitiveness analysis can be observed, namely, the nation level, the industry level, the organization level, and the project level. Extensive research has been addressed on all the four levels of competitiveness in literatures. Typical studies include the Porter's Diamond Framework for achieving national

competitive advantage (Porter, 1990); the Global Competitiveness Report (WEF, 2004) and the World Competitiveness Yearbook (IMD, 2004) annually published to report the competitiveness of nations. Analysis on the competitiveness for real estate industry has also been addressed by researchers. For example, a typical study reported is the investigation of competitive strategy of housing industry at United Kingdom, France, and Sweden, aiming to compare the competitive strategies of the housing industry in the three countries (Barlow and King, 1992). The subject of competitiveness at general firm level has also been extensively studied, e.g. the Competitive Strategy School (Porter, 1980; 1985), Resource Based View and Core Competence School (e.g. Wernerfelt, 1984; Barney, 1991; Hamel and Prahalad, 1994), and the Strategic Management School (e.g. Wheelen and Hunger, 2002; Pitts and Lei, 2003). A lot of research efforts have been given to study the competitiveness at project level (Drew and Skitmore, 1992; Shen *et al.*, 2004).

The scope of this study can be described in three aspects:

- i. Competitiveness from the perspective of firm level,
- ii. Domain of organization – focusing on general real estate developers, and
- iii. Business environment boundary – the Chinese real estate industry

The study is focused on the firm competitiveness, rather than the national, industry or project level. And the study will limit its investigation to the competitiveness of general real estate developers. Chinese real estate market is selected as the study boundary for examining the influence of external environment to the competitiveness of real estate firms. The research is geographically limited in China not only because the Chinese real estate market provides a particular context for conducting the research, but also the market provides the biggest market for operating real estate business in the world.

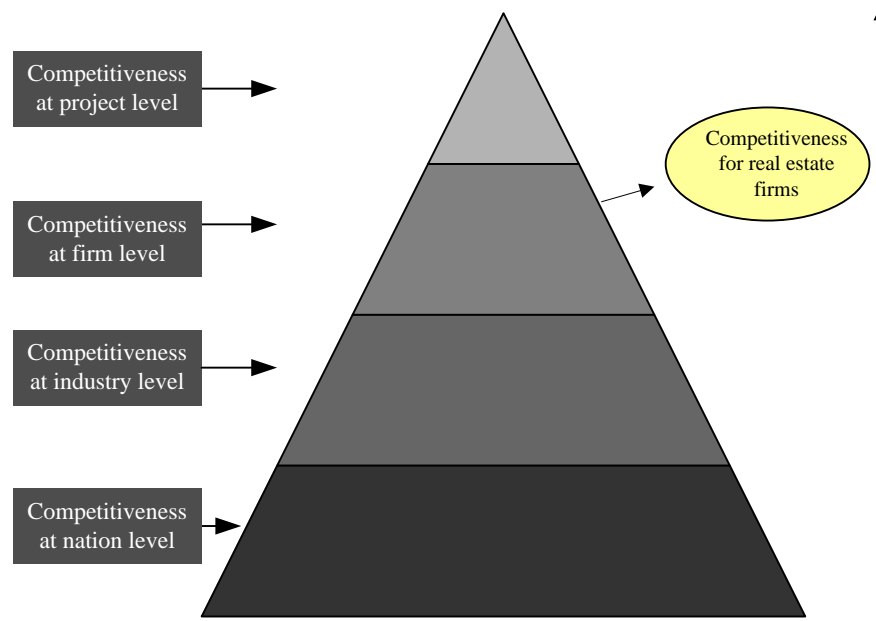


Figure 1.1 A demonstration of different levels of competitiveness

There are three key concepts in this research to be defined:

Competitiveness

The competitiveness is a multifaceted concept, which can lead to differences in its definitions. There are two major kinds of implications for a real estate developer’s competitiveness in this study, which can be expressed from internal and external perspectives. On one hand, competitiveness for developers refers to its ability to provide real estate products and services with lower costs in a more effective and efficient way; on the other hand, competitiveness means the developer can adapt to the dynamic environment and make effective market strategies by adopting various firm resources, capabilities and mechanisms. If developers can achieve and sustain superior performance than their competitors in the market, it is assumed that they are competitive overall.

Strategies for improving competitiveness

Porter (1980) defined the competitive strategy as “... a combination of the ends (goals) for which the firm is striving and the means (policies) by which it is seeking to get

there.” Porter further proposed that the product-market decision should be viewed in terms of how the business creates value (differentiation or low cost) and how it defines its scope of market coverage (focused or market-wide). Miles and Snow (1978) identified four archetypes of how firms address product-market strategy decisions: prospectors, defenders, analyzers, and the reactor.

In real estate industry, a developer’s strategy for improving competitiveness is concerned with the patterns of choices managers make over which markets to serve and how the business creates more value for buyers than its competitors. After the analysis, the strategy can help the decision-makers in real estate firms take relevant actions and allocate necessary resources to improve their organizational competitiveness.

Real estate developers

The domain of the research is the real estate developers rather than other types of real estate firms, such as real estate brokerage firms, property management firms (sale and leasing), property consulting and services firms, real estate finance firms and investors. In China Mainland, real estate developers are involved in all the activities in the value chain of real estate industry. For example, these activities cross from feasibility studies to project strategic management, design management, construction management, sales and marketing, and property management.

1.3 Research Objectives

The overall objective of this study is twofold: firstly, developing a model to communicate the competitiveness for real estate developers; second, developing a method to identify the core competitiveness indicators for real estate developers, and investigating key strategies for competitiveness improvement. These can be entailed as follows:

- i. To examine the dynamic characteristics of business environment for real estate developers
- ii. To develop a model for identifying competitiveness indicators for communicating real estate developers' competitiveness
- iii. To identify the core competitiveness indicators (CCIs) for real estate developers among different development stages
- iv. To apply the CCIs for developing green development strategy and risk management strategy for competitiveness improvement for real estate developers

1.4 Significance of the Research

This research has both theoretical and practical value. This can be elaborated as follows:

- i. Previous studies have addressed the subject of “competitiveness” mainly from resource-based view theory, core competence theory and Porter’s industry analysis theory. These studies however address the subject by adopting a “static” approach without considering the changes and dynamics in the business environment that affect the way of measuring competitiveness. This research extends the traditional methodology of studying competitiveness to a “dynamic” perspective by employing empirical data. This contributes to the development of the theory of competitiveness.
- ii. The study makes contributions to the healthy development of the Chinese real estate industry by helping the real estate developers to understand and improve their competitiveness. The real estate industry is a driving force for sustainable economic development in China. This is echoed in other studies suggesting that

real estate sector in China contributes heavily towards the gross domestic product (GDP) (Liu, 2010). With the development of economic globalization, the Chinese local real estate developers are to compete for businesses against the developers from all over the world. Increasing number of foreign developers has entered into the Chinese real estate market particularly since China's accession to the WTO in 2001. And competitiveness becomes the key for real estate developers to compete against their domestic and overseas competitors in order to survive in the market. It is expected that this study can present an effective approach for the real estate developers in the Chinese market to understand their competitiveness and key strategies for improving their competitiveness.

- iii. The research provides an effective approach for gaining a comprehensive understanding on the dynamic characteristics of the Chinese real estate business, which affect the competitiveness of real estate developers in the market. The typical dynamic factors include government industrial policy; fiscal and financial policies diversified and personalized customer demand, technology upgrading, the emergence of knowledge-based economy and the rapid development of information technology. Moreover, the various taxes and fees policy formulated by government at different development stages will influence the real estate prices as well as the purchasing capacity. The understanding on the major dynamic forces can help businesses to adopt due strategies for improving their competitiveness. Real estate market particularly in those developing countries such as China is more vulnerable to policy and economic changes in comparing to other industries. By employing an effective approach to understand these changes, real estate developers can adjust their strategies for improving business competitiveness. Furthermore, the study introduces a set of

core competitiveness indicators (CCIs) for measuring real estate developers' competitiveness in the dynamic market environment. It signals to the developers that they have to take dynamic strategies to maintain their competitive advantages as existing competitiveness can be outdated when business environment changes. This research contributes to developing an approach for helping the real estate developers in the Chinese market to identify CCIs under dynamic environments, thus develop and nurture a sustained competitive strategy by adapting to the environmental changes.

1.5 Research Methodology

Research methodology is an inquiry-and-solution process, and different research methods will be applied when different research objectives and research questions are addressed. There are several research objectives defined in this study. In line with these research objectives, several research methods are designed for achieving the objectives. Individual chapters are designated to contributing to different objectives by using specific methods. Figure 1.2 provides a framework for highlighting the logics between research objectives, research questions, and research methods. It can be seen that individual research objectives are addressed by raising certain research questions, which will be in turn answered by employing various research methods.

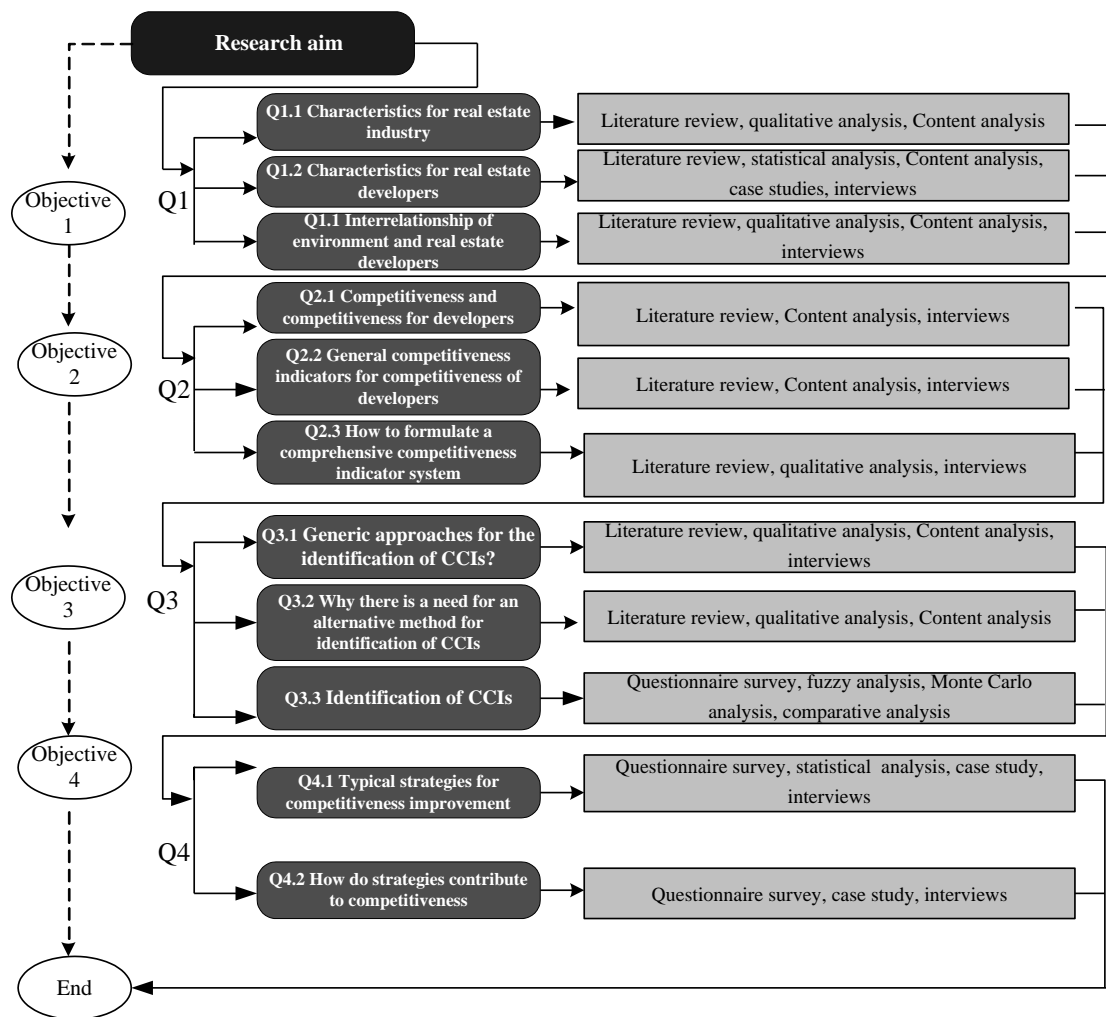


Figure 1.2 Research framework for the study

1.5.1 Formulation of Research Questions

The research objectives will be achieved by addressing a number of research questions described as follows:

For objective 1:

Q1: What are the characteristics of external and internal business environment for real estate developers, and how the characteristics affect real estate developers' competitiveness?

Q1.1 What are characteristics of external environment for real estate developers?

Q1.2 What are characteristics of internal environment for real estate developers?

Q1.3 How does the environment (external and internal) affect the competitiveness of real estate developers?

For objective 2:

Q2: How to examine the competitiveness of real estate firms with reference to the Chinese real estate industry?

Q2.1 What is competitiveness and what is the competitiveness for real estate firms?

Q2.2 What general competitiveness indicators should be selected for understanding the competitiveness of real estate developers?

Q2.3 How to formulate a comprehensive competitiveness indicator system?

For objective 3:

Q3: How to understand the core competitiveness indicators (CCIs) for real estate developers?

Q3.1 What are generic approaches for the identification of core competitiveness indicators (CCIs)?

Q3.2 Why there is a need for an alternative method for identifying CCIs?

Q3.3 What are the CCIs for understanding real estate developers' competitiveness in China?

For objective 4:

Q4: How to improve real estate developers' competitiveness by incorporating the CCIs?

Q4.1 What are the typical strategies for real estate developers to improve their competitiveness?

Q4.2 How do these strategies contribute to the competitiveness improvement?

1.5.2 Major research Methods

The selection of appropriate research method depends on the research objectives and research focus. Appropriate research method will help identify the logics between research questions, data collection, data analysis and conclusions. The main research methods adopted in this study include literature review, content analysis, practical interviews, questionnaire survey, case studies, and quantitative analysis. The details of these methods are described as follows:

Literature review

Literature review will be conducted comprehensively. It helps building up a solid theoretical understanding on the subject, reviewing previous relevant research works to justify the originality of the topic, explaining how the research concerned builds on previous research works, comparing and applying the previous research methods, utilizing the previous research results to support the discussion in the study.

Literature review is critical endeavor for any academic research. As opined by previous researchers that there is a necessity to uncover what is already known in the body of knowledge prior to initiating any research study (Hart, 1998). The literature review in this study will be focused on providing insights into the understanding on competitiveness, the measurement of competitiveness and competitiveness improvement strategies for business particularly for real estate developers. The examination will also be given on the characteristics of the real estate business environment in China.

Content analysis

Content analysis is one of classical approaches to study research problems from documentary evidence (Holsti, 1969). With progressing of computer technology, the

content analysis has been widely utilized in social sciences (Rattleff, 2007). The content analysis in this study leads to investigating the characteristics of the real estate industry and developers by reviewing the existing literatures and analyzing the documents such as the published regulation and reports. Special considerations will be given to examining the impacts of the business environment characteristics to the selection of indicator measures for addressing real estate developers' competitiveness in China.

Quantitative analysis

Quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena and their relationships. Quantitative analysis includes developing or employing mathematical models, theories or hypotheses pertaining to phenomena. Quantitative analysis in this study is to analyze the data collected from practical interviews and questionnaire survey data by using mathematical techniques such as statistical models particularly for identifying the core competitiveness indicators for real estate firms. In particular, the descriptive analysis, reliability analysis on questionnaire survey data, fuzzy set theory and Monte Carlo simulations (MCS) are conducted in this study. Application of Fuzzy Set theory is effective to mitigate the fuzziness problem in questionnaire survey. It utilizes membership probability to identify critical indicators. MCS is a useful tool applied in a situation where there is uncertain and uncontrollable input information whose probability distribution is known and can be handled analytically.

Practical interview

Practical interview is widely employed in research for collecting data. Freire and Alarcon (2002) suggested that interview serves as a brainstorming instrument for

defining and resolving research questions. In adopting interview method, a designated form is used for guiding the conversation between researchers and interviewees, in which questions are prepared for obtaining information from interviewees. Interviews can be conducted in the form of face-to-face interview, panel interviews, telephone interview, group interviews and sequential interviews.

This study adopts the face-to-face interviews with understanding the practitioners' perception on real estate developers' competitiveness in the Chinese real estate market by raising a number of questions. The semi-structured interviews were adopted through open-ended questions whilst each interview was controlled within one and a half hours and the interview works were conducted in August and September in 2008. The key questions include: "what is your view on the concept of competitiveness for real estate firms?", "the history of your company's business development", "What indicators are suitable for measuring real estate developers' competitiveness?", "Do you think different competitiveness indicators are necessary for measuring organizational competitiveness at their different development stages?" 20 interviews were conducted successfully. Senior managers are selected from real estate enterprises to participate in interviews, including 10 vice general manager, 5 general managers, and 5 departmental managers in organizations. These experts are selected to ensure that they have professional knowledge and experience on real estate business. The practitioners mainly come from real estate firms which are located in the Yangtze River Delta (including Shanghai, Hangzhou, Nanjing, and Suzhou), Pearl River delta (including Shenzhen and Guangzhou) and Beijing.

During the interview surveys, notes were taken on site and summarized afterwards, then sent to the interviewees for confirmation. The confirmed transcripts are eventually

compiled into twenty interview minutes. The interview minutes are important data for analysis in the study.

Questionnaire survey

A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from experts. The method is commonly appreciated for its effectiveness in obtaining maximum possible responses (Dillman, 1978).

Objectives for the questionnaire survey

The core issues of this research are the competitiveness and strategy for improving the competitiveness of real estate developers in China. In order to gain a comprehensive understanding of these issues in the real estate business in China, two questionnaire surveys are conducted as follows:

- i. In questionnaire survey 1, research data for investigating competitiveness indicators and their relative significances are identified to assist real estate developers to analyze their strategic position in the Chinese real estate market.
- ii. In questionnaire survey 2, green strategies for improving the competitiveness of real estate developers are discussed. The survey is conducted to understand the significance of applying green elements to gaining competitive advantages, as well as barriers in practical application are further explained.

In the first survey, Core competitiveness indicators (CCIs) for real estate developers are identified. Based on the findings of the first survey, the effectiveness of the two major competitiveness improvement strategies is studied. Furthermore, the following theoretical methods are used for data analysis:

- i. relative importance index for indicators ranking;
- ii. fuzzy set approach;
- iii. Monte Carlo Simulation approach;
- iv. Relevant statistical methods with the assistance of an SPSS (Statistical Program for Social Sciences) package, including internal consistency, correlation coefficient, and reliability analysis.

These methods will be introduced in relevant chapters, particularly chapters 4, 5, 6, 7 and 8).

Sample Selection

The objective of sampling is to seek for a practical way of collecting data while ensuring that the sample will provide a good representation of the population. There are various ways of sampling depending on the nature of the population. These are random, judgmental, and non-random samplings (Fellows and Liu, 2003). If there is no evidence of variations in the population structure, or if the variations of structure is negligible, random sampling will be an appropriate choice. Otherwise, it is necessary to restrict the sampling in a particular frame which represents the particular population structure. In this case, both the judgmental and non-random sampling is selected to conduct the survey.

The target respondents for the questionnaire survey in this study were among senior managers of developers and researchers in the relevant academic fields. Substantial efforts were contributed to selecting suitable respondents for the survey. A list of 200 senior practitioners was identified from two official databases (China Real Estate Industry Business Directory and Year book for Chinese large scale real estate and construction enterprises). Generally, it is quite a large population and the sample

selection will represent various types of real estate developers with different backgrounds. In this research, the judgmental sampling method is used to draw samples from the population of senior managers from real estate developers in China. The respondents for participating in the survey exercise are suggested to have worked in the real estate industry for a long time and hold senior positions in their organizations thus have knowledge and experience in giving professional opinions on organizational competitiveness, strategies for improving the competitiveness of real estate developers. Further 200 senior academics were selected from the directory of relevant building and real estate departments in universities in China. After the identification of experts, both postal invitation letter and e-mail were sent to directors or general managers of the identified organization, and the identified academics. In order to increase the sample size in the survey, the ‘snowball’ sampling method was used by inviting those respondents to help distributing the questionnaires to their senior colleagues or business partners whom they know and have rich experiences in housing development in China. Consequently, 450 questionnaires were dispatched.

The senior managers of the real estate firms are chosen as the research informants, since they are expected to possess the most knowledge regarding the company’s external and internal environment, competitiveness, and strategies for improving the competitiveness of real estate developers. The contact information was used solely for research purposes and kept confidential. In each survey questionnaire, all those respondents served as the targets. Thus, they could also receive the preliminary results of the last survey.

Case study

Case study is one of the research strategies used in this study for further understanding and verifying the results derived from data analysis. Case studies can employ an embedded design, that is, multiple levels of analysis within a single study (Yin, 1984). It is particularly adopted for demonstrating the data used in investigating the characteristics of real estate developers and the effectiveness of two key strategies for competitiveness improvement in the Chinese real estate market. There are three groups of case studies conducted in this study, as shown below:

- i. In Case study 1, research data for investigating the development stages, the business value chain activities and stakeholder relations encountered in the housing development process are discussed. The data are obtained by interviews and annual report of real estate developers to assist real estate developers understand the development stages, value activities and stakeholder relations in the Chinese real estate market. Further detail is addressed in Chapter 4.
- ii. In Case study 2, research data for identifying what kinds of competitive advantages real estate housing developers can gain by implementing green strategies are discussed. The case studies are conducted to verify questionnaire survey results and deepen the understanding on the implications of the survey. Further detail is addressed in Chapter 7.
- iii. In Case study 3, research data for finding out relevant strategies to respond to the changing policies for improving competitiveness are addressed by three case studies. The case studies are conducted to verify the questionnaire survey results and help decision makers manage the major policy risks for real estate developers to improve their competitiveness. Further detail is addressed in Chapter 8.

The details for case studies will be demonstrated in the individual chapters.

1.6 Dissertation Organization

This thesis consists of eight chapters. Chapter 1 presents the introduction of the study. It highlights the research background, research originality, motivation, scope, research objectives, significance, methodology, and the structure of the dissertation.

Chapter 2 presents a comprehensive literature review for this study. It builds up the theoretical understanding on the subjects of competitiveness and the Chinese real estate business environment. Major schools of theories on competitiveness are reviewed. The review further shows the significance and originality of the study, and leads to the identification of tentative competitiveness indicators tailored for real estate developers.

Chapter 3 firstly develops an analytic framework to guide the investigation on the industry development. Following the analytic framework, this chapter then explores the characteristics of the Chinese real estate industry from examining external environment and industry environment. The understanding on the dynamic Chinese real estate business environment provides solid foundation to identify the competitiveness indicators for real estate developers in China.

Chapter 4 examines the development and characteristics of the Chinese real estate developers. The characteristics of real estate developers are explored along three aspects including the business development stages, the business value chain activities, and the relations with stakeholders involved in the process of property development. The detail examination on these three aspects has highlighted the key areas where developers' competitiveness comes from. Based on the understanding of specific

characteristics of real estate developers in China, the competitiveness indicators suitable for the measurement in this market are discussed in details in Chapter 5.

Chapter 5 has developed a set of competitiveness indicators for application in the Chinese real estate market. The development of these indicators is based on a model.

In applying the model, competitiveness indicators are identified under a hierarchy structure comprised of three major attributes: resources, capabilities and management mechanism. Chapter 6 presents the identification of Core competitiveness indicator (CCIs) for real estate developers at different development stages in the Chinese real estate environment. The identification is derived from analyzing the data collected from comprehensive questionnaire survey exercises.

Chapter 7 presents the key strategies for competitiveness improvement, namely, green development in the Chinese real estate market. Case studies are employed to support the effectiveness of the strategy.

Chapter 8 presents the key strategies for competitiveness improvement, namely, risk management in the Chinese real estate market. Case studies are employed to support the effectiveness of the strategy.

Chapter 9 concludes the key findings of the study, highlights the limitations of this study, and suggests recommendations for further researches.

**CHAPTER 2 LITERATURE
REVIEW**

CHAPTER 2 LITERATURE REVIEW

This chapter presents the review of the literature associated with the subjects of competitiveness, competitiveness at firm level and key theoretical and practical investigation on real estate firms' competitiveness.

- *2.1 Introduction*
- *2.2 Conceptual understanding on competitiveness*
- *2.3 The theory on firm competitiveness*
- *2.4 Competitiveness for real estate firms*
- *2.5 Summary*

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review on the subject of organizational competitiveness relevant especially to the real estate firms in the Chinese market. There is a huge body of knowledge on the subject of competitiveness developed in the literature; the review in this study covers major streams. First, the concept of competitiveness is discussed in order to provide a basic foundation of theoretical understanding on the subject. Based on this, major schools of theories on the competitiveness at firm level are reviewed, including those typical theories such as Porter's Competitive advantage model, Resources-Based competitiveness theory, Core Competence approach and dynamic competence capability. Finally, research and application of competitiveness for real estate developers are reviewed to provide a context for further study.

2.2 Conceptual Understanding on Competitiveness

2.2.1 Definition of "Competitiveness"

In an early study by Stephen Hymer (1970), an American scholar, competitiveness at firm level is well addressed. Hymer completed his doctoral thesis entitled "the international operations of national firms: a study of foreign direct investment." In the thesis, he linked the business investment with the international competitiveness of enterprises. Hymer's study focuses on organizational procedures and their effects on organizational competitiveness. In fact, since the mid-1970s, more and more research efforts have been put on the enterprises' competitiveness as the competition in international market becomes more and more acute. The motivation for the research in this discipline was driven by the needs and demands for solutions of competitiveness

empowerment from enterprises. The research methodology adopted in these developments was mainly from perspectives of planning and managing enterprise competitiveness, addressing various factors particular economic factors affecting organizational competitiveness, such as the country's economic structure, competition and industrial policy, innovation support, etc.

Competitiveness at industrial level has also been comprehensively addressed in the literature. For a typical example, the study by US Department of Commerce (1983) on competitiveness assessment focused on the industrial competitiveness. In his study, competitiveness is described as "Industrial competitiveness is the ability of a company or industry to meet challenges posed by foreign competitors." The concept of competitiveness has been widely used in the discipline of economics and business management, particularly in the context of national competitiveness. The World Economic Forum (WEF) has been publishing "the international competitiveness report" annually since 1986. In 1990, the WEF published jointly with the International Management and Development Institute (IMD) (1990) the "International competitiveness report". In the report, they conducted the analysis on the international competitiveness of the 24 Organization for Economic Co-operation and Development (OECD) members and 10 newly industrialized countries (regions) by employing a large number of both quantitative and qualitative indicators. The report had induced great impacts to the governments throughout the world, and aroused interests in both industrial as well as academia fields. In line with these developments, various studies on competitiveness, principles, methodologies and evaluation index system in the international competitiveness have been conducted, and competitiveness theory has been therefore established.

In the report produced by the Competitiveness Advisory Group of European Commission (Ciampi, 1996), competitiveness is focused on productivity, efficiency and profitability. It is widely appreciated that competitiveness has become an attractive concept across different levels of studies (Nelson, 1992).

Research efforts made to define the concept of competitiveness can be found extensively. Investigations of the topic can be conducted from the perspective at national, industrial, firm or project level. The distinction between these four levels is made as the analytic context is significantly different at different level. For example, Scott and Lodge (1985) consider that National competitiveness refers to a country's ability to create, produce, distribute and/or service products in international trade while earning rising returns on its resources. Buckley *et al* (1988) defines industrial competitiveness as both efficiency (reaching goals at the lowest possible cost) and effectiveness (having the right goals). Competitiveness involves a combination of assets and processes, where assets are inherited (e.g. natural resources) or created (e.g. infrastructure) and processes transform assets to achieve economic gains from sales to customers (Department of Industry, Science and Resources, 2001). Ivancevich *et al* (1996) define competitiveness as the degree to which a firm can, under free and fair market conditions, produce goods and services that meet the demand of international markets while simultaneously maintaining or expanding the real incomes of its employees and owners. Traditionally, the competitiveness of a product or service refers to its capability to compete in the market, satisfy customers, take up market share, and make profits for shareholders. This can be applied into construction project level. Competitiveness at the construction project level is then about a contractor's capacity to win a contract and to undertake that project (Flanagan, 2007).

There are many terminologies for competitiveness, such as “competitive advantage”, “core competence”, “core capabilities”, “distinctive competence”, and “core expertise” etc. Among these concepts, “competitive advantage” and “distinctive competence” focused on economic perspective, reflecting cost advantages and market share of enterprises’ products or services and their ability to obtain long-term profits. “Core competence”, “Core capabilities”, “distinctive competence”, and “core expertise” focus more on management perspective, stressing that the enterprises with the culture of learning, coordination, cohesion function are more competitive in the market.

2.2.2 Competitiveness at Firm Level

The study on the competitiveness at firm level has been developing for a long history. It has attracted the interests from business, government, and academics. In a typical report by US Competitiveness Policy Council (1992), firm competitiveness was defined as the firm’s ability to produce goods and services that meet the challenges of international markets. According to the Report of the Committee of the House of Lords on Overseas Trade of UK (1985), a firm is competitive if it can produce products and services of superior quality and lower costs than its domestic and international competitors. Competitiveness is synonymous with a firm’s long-run profit performance and its ability to compensate its employees and provide superior returns to its owners.

The World Economic Forum (WEF) and the International Institute of Management Development (IMD) have been producing annual reports on competitiveness. The competitiveness is regarded as an integrated concept, which stems from the internal efficiency of enterprises and enterprises’ external business environment. The competitiveness of enterprises depends on a combination of five factors, including changes in technologies, changes in business process, the external environment,

business confidence and industrial structure. In the world competitiveness report published by both WEF and IMD (1991), firm's competitiveness was described as the immediate and future ability of, and opportunities for, entrepreneurs to design goods worldwide whose price and non-price qualities form a more attractive package than those of foreign and domestic competitors. Spence and Hazard (1988) considered enterprises' competitiveness as the enterprises' trade capability in the international market. In this view, trade flows, technology development, management as well as specific industrial policy, domestic policy, and monopolistic competition have a profound impact on the enterprises' competitiveness. This definition emphasized the environmental factors to the businesses' competitiveness. Fisher (1990), the Chairman of the American Committee for Competitiveness, opined that enterprises' competitiveness means enterprises' capability to exquisite, create and apply knowledge. This definition suggests that the enterprise competitiveness comes from intangible drivers such as the knowledge capability. Kotler (1996) suggested that the competitiveness of enterprises is to offer greater value than competitors. Porter (1985) considered that enterprises' competitive advantage came from the willingness of enterprises to create more cost than its value. Both Kotler and Porter consider enterprises' competitiveness from the perspective of market performance of enterprises. Fujimoto (1999) defined the firm competitiveness as the capability of enterprises that can be inspected from three aspects: the static capability, improved capability and the evolution capability. Static capability refers to the ability which has been achieved already. Improved capability means the ability of enterprises to maintain and continuously improve the competitiveness. And the evolution capability refers to the capacity for enhancing the static capability and improved capability.

It can be seen that researchers find difficulty to reach a consensus on the definition of firm competitiveness. Some defines competitiveness from business performance perspective, some from capacity view, and some from the resource perspective, and some from the influences of external environment.

From the above review on the definitions of firm competitiveness, the following summaries can be made: (1) the competitiveness of enterprises demonstrates an organization's strength and advantage over its competitors. The strength is developed in a dynamic process, which can help an organization sustain its competitive advantage by optimizing firm resources and employing dynamically appropriate capabilities. (2) The concept of competitiveness for enterprises is a relative concept. It indicates the relative strength of the sustaining capabilities than their competitors in the market. An organization with better firm competitiveness normally has better business performance in product design, production and sales activities thus it can satisfy more customer demands and generate enterprises' profits, and contribute to the firm's sustainable development.

However, it is argued that all these existing definitions on firm competitiveness are mainly addressed from a static view by investigating the competitiveness at a certain time point. In fact firm competitiveness is dynamic as the contributing factors are always changing, such as the level of technology, the production process, the policy. On the other hand, competitiveness is a multi-attribute concept, which not only includes "capability", "resources", but also the "mechanism" that motivates these elements. The understanding on the concept needs to be related to business environment, which is characterized with various internal and external dynamic factors. Therefore, this study emphasizes that it is important to understand firm competitiveness by a dynamic view.

2.3 The Theory on Firm Competitiveness

Extensive literatures have been addressed on the theory of firm competitiveness. In this study, theory on firm competitiveness can be classified into two main schools: theory of external competitiveness and the theory of internal competitiveness theory. It is identified that the firm competitiveness theory develops first from external to internal disciplines. Therefore, the two schools of theory will be demonstrated in details in the following sections.

2.3.1 The theory of external competitiveness for firms

The external competitiveness theory mainly refers on various external factors which affect the competitiveness of a business enterprise. There is wide range of these external factors, for example, the industry structure, industry policies and regulations, and competition intensity of industry.

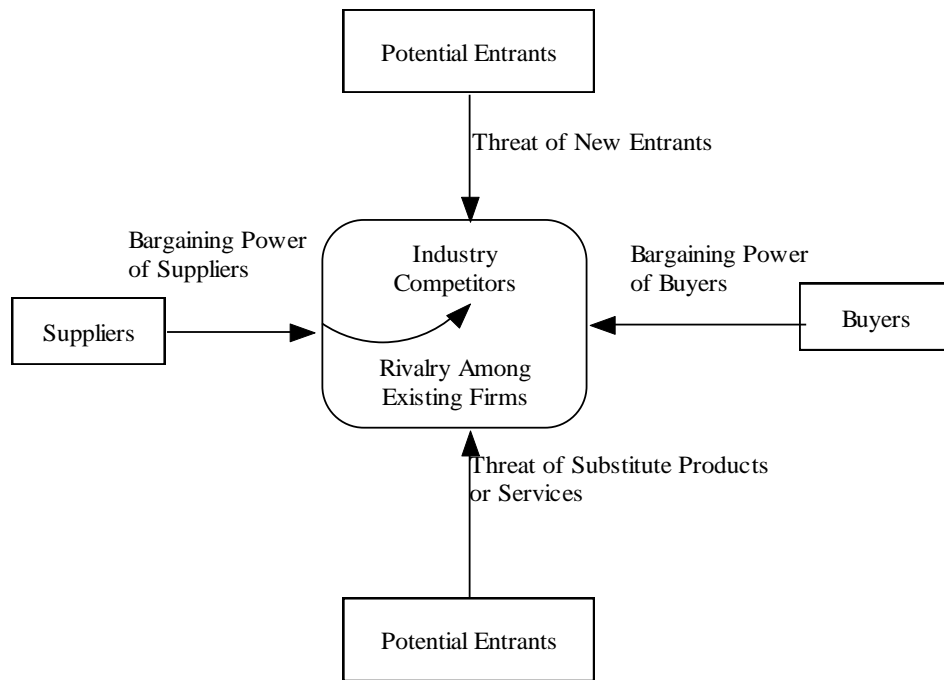
The origin of external competitiveness theory starts from the school of industrial economics. In the discipline of industrial economics, the structure-conduct-performance (SCP) paradigm is a conventional approach for analyzing market competition (Bain, 1968; Greer, 1992; Wang, 2004). In particular, market structure refers to the distribution status of all business firms in a given market. It can be indicated by the number and relationship of suppliers and demanders, and inter alia the degree of market shares concentration (Gruneberg and Ive 2000). Market conduct describes firms' competition behaviors with respect to advertising, cost, pricing, marketing strategy, innovation, and production (Bonanno and Haworth 1998; Carlton and Perloff 2005). Market performance presents the outcome of firms' operation efficiency over a span of time. Indicators of market performance normally include profitability, productivity, technical efficiency, and labor efficiency. These indicators

provide market information that firms can use when considering the appropriateness of competition behaviors (Bonardi, 2001; Shepherd and Shepherd, 2004). By using this SCP paradigm, Bonardi (2001) studied on the relationship between advertising, concentration, and profitability in the U.S. manufacturing industry and claimed that advertising intensity can be determined by the interaction of profitability and concentration.

The classical SCP theory has been criticized by many scholars, such as Porter (1980; 1990). In fact, Porter's competitiveness theory was developed based on the principles of industrial organization paradigm and business competitive advantage introduced by earlier studies of SCP theory (Bain, 1959; Mason, 1939). These issues have been well addressed in a typical previous study by Porter (1980, 1985). Porter's competition theory for firms is well discussed in his two books: *Competitive Advantage* (Porter, 1980), and *Competitive Strategy* (Porter, 1985). These theories have been widely referred by academic scholars and executives in the industry. The key issues that Porter (1980, 1985, 1990 and 2008) addressed can be discussed as follows.

Five competition forces

Porter (1980) suggested that the actions by firms to take against market competition need to consider five forces. They are called five competition forces: threat of new entrants, suppliers, buyers, threat of substitute products or services, and rivalry among existing firms. This five competition- forces model can be graphically in Figure 2.1.



Source: Porter, 1980

Figure 2.1 Five competition forces approach for structural analysis of industries

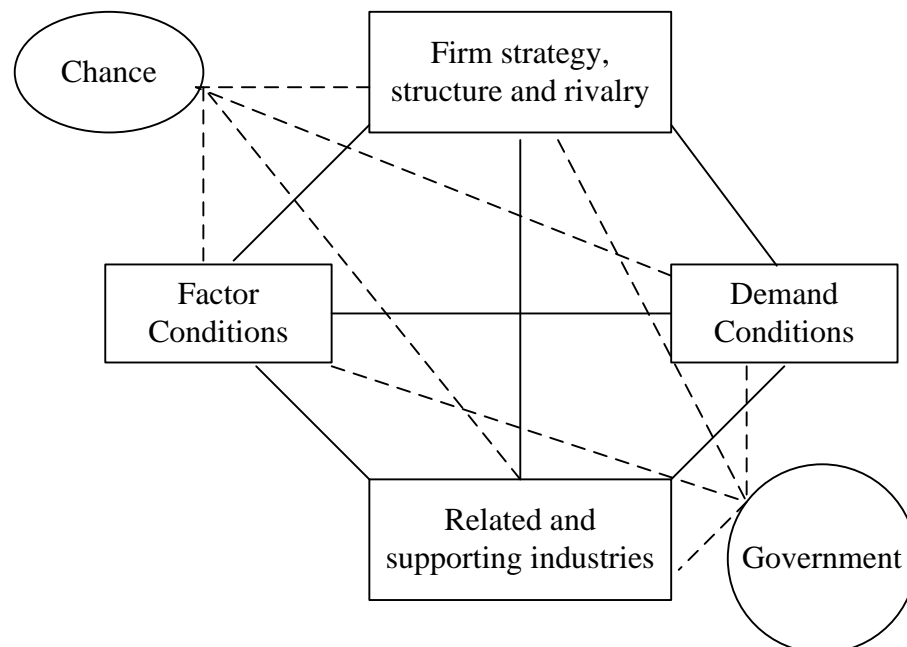
A company can achieve competitive advantage by considering these five competition forces. For example, firms establish barriers to deter new entrants from coming into an industry by fostering unique resources that new firms cannot easily imitate. Firms can also increase bargaining power over their customers and suppliers by increasing their customers' switching costs and decreasing their own costs for switching suppliers. In his recent study, Porter (2001) reemphasized the importance of analyzing the five competition forces in developing strategies for competitive advantage by addressing:

“Although some have argued that today’s rapid pace of technological change makes industry analysis less valuable, the opposite is true. Analyzing the forces illuminates an industry’s fundamental attractiveness, exposes the underlying drivers of average industry profitability, and provides insight into how profitability will evolve in the future. The five competitive forces still determine profitability even if suppliers, channels, substitutes, or competitors change (p. 66).”

Porter’s Diamond Model

The Diamond Model was proposed in Porter's book *The Competitive Advantage of Nations* (Porter, 1990). The model determines industrial competitiveness, and explains why some nations gain competitive advantage in the international markets. The model is shown in Figure 2.2. It can be seen from the model, there are four determinants that allow industries to build competitive advantage:

- Factor conditions;
- Demand conditions;
- Firm strategy structure and rivalry; and
- Related and supporting industries.

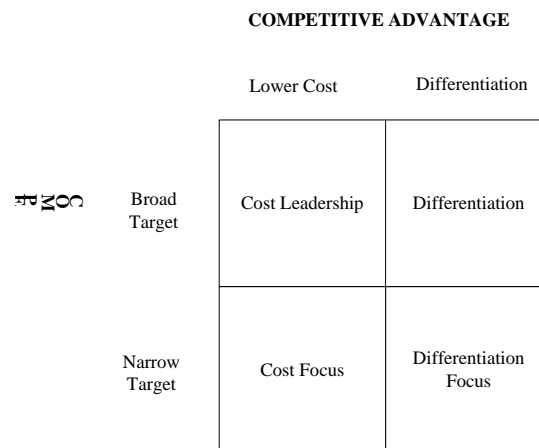


Source: Porter, 1990
Figure 2.2 Porter's Diamond Model

Porter's Diamond Model is a framework that defines the rules of competition in an industry and highlights what is important in order to have long-term competitive advantage. Thus, it is widely used to establish a conceptual frame in competitiveness analysis of industries and nations.

The three generic competitive strategies

Porter (1980) introduced three generic strategic approaches for achieving a firm's competitiveness, namely "the cost leadership", "differentiation", and "focus". These strategies can be used to help a firm to cope with the five competition forces in the market). The three generic competition-strategy model can be shown in Figure 2.3.



Source: Porter, 1980

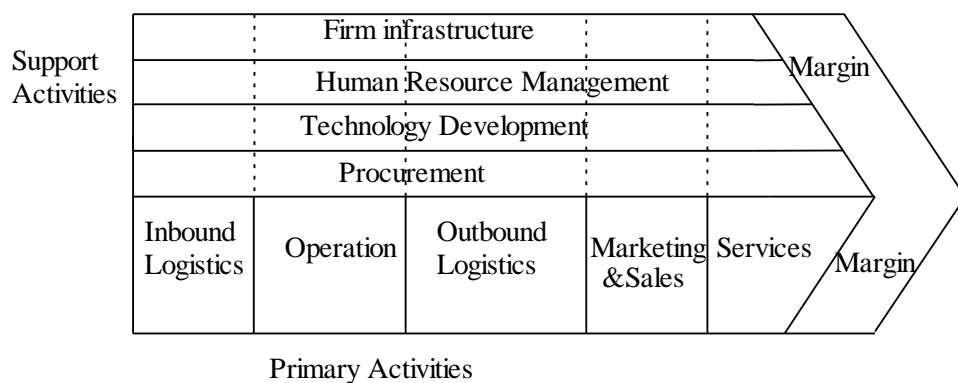
Figure 2.3 Three Generic Strategies

The cost leadership strategy requires firms to become the product producers with lowest cost in an industry in order to gain competitiveness. Efforts should be devoted to cost controls so that the average profits can be obtained even with lower prices. The sources of cost leadership include the pursuit of economies of scale, proprietary technology and other factors. On the other hand, the differentiation strategy aims to create the product or service that customers consider as unique. Porter (1980) argued that differentiation strategy erects competition barriers for other competitors to entry, provides higher profit margins, and reduces the power of buyers who consider the products cannot be found from other firms. This differentiation can be associated with design or brand image, technology, features, dealer network, or customer service. Furthermore, the focus strategy specifies a specialized market segment - a certain group of customers, a limited geographical area, or a range of products. According to Porter (1980), the focus strategy lies in the premise that the firm is able to serve its targeted

market more effectively or efficiently than competitors who are competing more broadly. As a result, the focus strategy has two variants, cost focus and differentiation focus. When the lower cost and differentiation strategies enjoy a broad market, they are simply named as cost leadership and differentiation.

The value chain model

Porter (1985) defined an organization’s production process as a value chain model for examining organizational competitiveness. In this model, the business activities for a company are broken into nine activities, including five primary and four supportive activities, as shown in Figure 2.4. Porter (1985) suggested that a firm’s competitiveness could come from all these value chain activities. In the model, it is addressed that firms should be concentrated on identifying and using those unique resources which are possessed by the organizations. By employing those unique resources, distinctive competences of the firms can be demonstrated in the process of value chain. In applying the value chain model, each activity in the chain can be analyzed and measured in order to identify organization’s core competence. Based on the analysis, measures can be taken to improve the organization’s competitive advantage by using the core competence. For example, the analysis will lead the firms to outsource those functions where it has no competence advantages, and the core competence can be identified and enhanced as a result.



Source: Porter, 1985

Figure 2.4 The value chain model within a business

The above highlights the key issues addressed by Porter in his typical works. The theory provides a powerful tool in analyzing the competitive environment by using the five competition forces. Second, the three generic competitive strategies have been widely used in different industries including manufacturing, healthcare, finance, and services. Nevertheless, Porter's theory does not address the internal mechanisms by which a firm may combine the challenging external environment with internal capabilities and resources. Each of Porter's competitiveness approaches can be used for analyzing the business positions and competitiveness. For example, the five competition forces model is one of the tools for conducting the external analysis (threats and opportunities analysis); the value chain analysis and the resource analysis are the methods for conducting the internal analysis (strengths and weaknesses analysis); and the three generic competitive strategies are the basis for identifying the proper competition strategy.

2.3.2 The Theory of Internal Competitiveness for Firms

The theory of internal competitiveness for business firms suggests that the competitiveness for a firm comes from its internal environment. The internal competitiveness stems mainly from internal resources such as financial capital, human resources, management capabilities, advanced knowledge and technology, and the entrepreneurship of senior managers. The internal competitiveness for firms can be understood from several schools of theories, including strategic planning, organizational theory, resource-based view, core competence view, and dynamic capability theory.

Strategic Planning theory

There are three typical research studies suggesting that internal competitiveness for firm is from strategic planning, which are Chandler's strategy and structure (1962), Harvard business policy view(Learned *et al.*, 1965), and Ansoff's corporate strategy (Rumelt *et al.*, 1994). The study by Chandler (1962) describes how enterprises in America expand their businesses through diversification and how this strategy affects the internal competitiveness of firms. It highlights the importance of a firm's internal organization structure to its competitiveness, and the structure should be adapted to its strategies. Ansoff (1965) opined that strategic planning is a useful management tool, and the purpose of strategic planning is to build up an effective bridge between a firm's environment and its capabilities and competencies. The emphasis is put on systematic forecasting, information collection, and planning procedures. He emphasized that the planning process in which business strategy is broken into implementable activities. By employing this planning process, firms can therefore gain their competitiveness step by step. However, critics have been received about the role of strategic planning for addressing firms' internal competitiveness. For example, Mintzberg (1990) argued that business strategies could hardly be fit for the changing environment if planning process is formalized and remains the same upon the changes of the external environment. Mintzberg (1994) further advocated that planning is relatively unchangeable but competitiveness factors are dynamic.

The theory of Organizational Learning

Organization learning has become one of the important competitive advantages for firms since the introduction of the theory by Cyert and March (1963). It is echoed by Teece *et al* (1990), suggesting that learning plays an important role in strategic management of firms. Organizations grow either by experience learning or strategic decision (Child and Kieser, 1981). As organizations grow, they learn from experiences

and make this learning process become organizational culture (Schein, 1985). Prahalad and Hamel (1990) introduced core competencies by promoting collective learning, and they believed that “being a learning organization is not enough; a company must be capable of learning more efficiently than its competitors.” By way of organizational learning, a knowledge transferring process occurs among employees (Van Maanen and Schein, 1979). In this context, Dibella *et al* (2007) defines organizational learning as the capacity (or processes) within an organization to maintain or improve firm competitiveness based on experiences. However, critics argue that the organizational learning theory ignores or underestimates the problems and complexities during the processes of learning (Dodgson, 1993). Furthermore, no matter how important the organizational learning is the knowledge, wisdom and experiences at individual level within the organization are too limited to achieve management efficiency for an organization, which may possibly waste time and resources.

Resource-based view (RBV)

Resource-based view (RBV) is one of the dominant paradigms in competitiveness theory. RBV was introduced by Penrose (1950), who advocated the significance of internal introspective and considered that the internal resources and capabilities can lead the proper strategic direction of business, and eventually become the main source of business competitiveness.

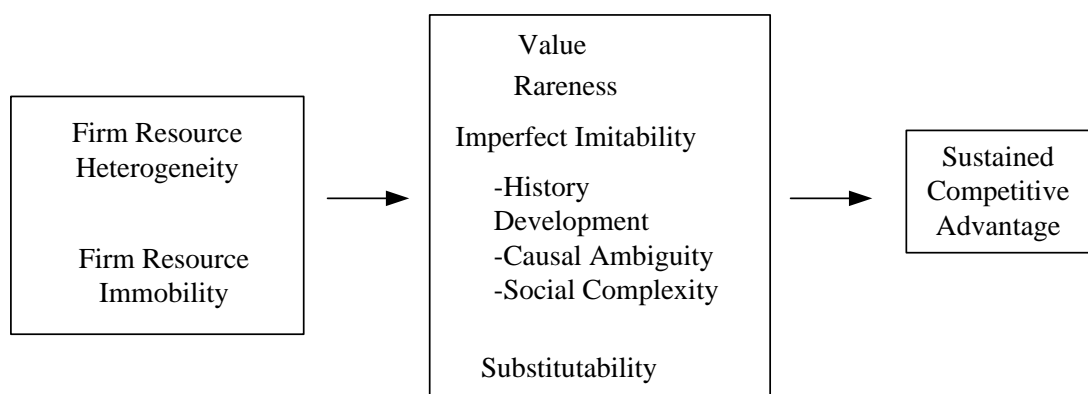
Table 2.1 Resource-based view literature

Main Content	References
● Distinctive competencies and core competencies are those difficult to replicate.	Andrews, 1971.
● Corporate culture that is valuable, rare and imperfectly imitable due to social complexity, tacit dimensions and path dependency.	Barney, 1986; Fiol, 1991.
● Culture that is the result of human action but not of human design.	Arrow, 1974; Hayek, 1978.
● Invisible assets that by nature is difficult to imitate.	Itami, 1987.
● Valuable heuristics and processes that are no easily imitated.	Schoemaker, 1990
● Response lags.	Lippman and Rumelt, 1982.

● Time compression diseconomies.	Dierickx and Cool, 1989.
● Resource position barriers.	Wernerfelt, 1984.
● Unique or rare resources that are not perfectly mobile.	Barney, 1991.
● Resources and limited strategic. Substitutability by equivalent assets	Dierickx and Cool, 1989.
● Valuable non-tradable or imperfectly tradable resource.	Barney, 1991.

Source: Mahoney and Pandian, 1992:363-380

As shown in Table 2.1, the development of RBV theory has been contributed by a number of other researchers, in particular, emphasizing how organizational resources contribute to diversification and how diversification leads to gaining core competencies for a (e.g., Peteraf, 1993; Prahalad & Hamel, 1990; Wernerfelt, 1984; Ryall, 1998). For example, Wernerfelt (1984) attempted to look at firms in terms of their resources rather than in terms of their products. A framework is introduced to analyze a firm’s strengths and weaknesses, focusing on the unique, costly-to-copy resources controlled by a firm. Barney (1991) developed a new framework to understand the sources of sustained competitive advantage, as shown in Figure 2.5. In the model, the organizational resources are described as “all assets, capabilities, organizational processes, information, knowledge, etc. controlled by a firm”. Barney (1991) considered that these organizational resources are valuable, rare, difficult to imitate and non-substitutable can yield sustained competitive advantage, which can help firms to gain competitiveness.



Source: Barney, 1991

Figure 2.5 The framework for organizational resources

Barney (1995) later on further discussed the framework by arguing that the unique competitiveness depends on two fundamental assumptions: resource heterogeneity and resource immobility. In the study by Mintzberg (1998), the organizational resources are categorized as physical capital resources (physical technology, plant, equipment, geographic location, access to raw materials), human resources (training, experiences, judgment, intelligence, relationships, etc.), and organizational capital resources (formal systems and structures as well as informal relations among groups).

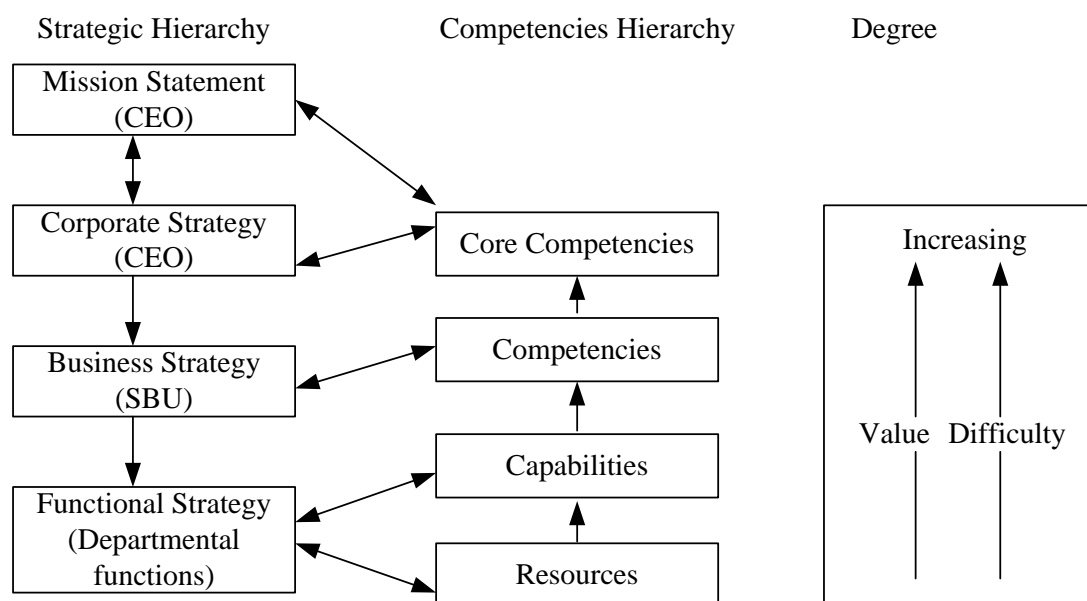
Whilst there are various studies on the subject RBV, the essential principle of the RBV is that the competitive advantage of a firm lies primarily in the proper application of valuable resources within the firm. However, it is challenged that RBV only provides a conceptual approach to analyze a firm's competitiveness. There is a lack of detail guidelines for application of the method. The conceptual model cannot help business managers know when and how to utilize these resources to achieve competitive advantages, as echoed by Mintzberg (1998).

Core Competence view

Prahalad and Hamel (1990) introduced the concept of core competence within organization. The concept is used as a tool for rigorous examination and exploitation of a firm's internal competitive advantage. According to Prahalad and Hamel (1990), core competencies is defined as the collective learning in the organization, especially how to co-ordinate diverse production skills and integrate multiple streams of technologies. Core competencies are a firm's fundamental strengths which cannot be easily copied by competitors. The identification of core competencies will help firms examine business opportunities where such competencies contribute to gaining competitive advantages.

The characteristics of organizational core competences can be best described by the metaphor used by Prahalad and Hamel (1990) “The trunk and major limbs is core products, the smaller branches are business units; the leaves, flowers, and fruit are end products. The root system that provides nourishment, sustenance, and stability is the core competence.”

Nevertheless, it appears that literature on core competence theory does not provide a method for identifying the core competencies and capabilities for a particular firm. This critic is echoed by Javidan (1998). In order to improve the core competence methodology, Javidan (1998) proposed a model for guiding the identification of core competence for a firm. This model is shown in Figure 2.6.



Source: Javidan, 1998

Figure 2.6 The core competencies hierarchy

It can be seen in the Figure 2.6, competitiveness for a firm is categorized into four hierarchy levels. At the bottom level of the hierarchy model, resources are considered basic competitiveness. Organizational resources are essential elements in building up the competitiveness for firms along firms’ value chain. In the hierarchy, capabilities are

second level competitiveness, which refer to a firm's ability to exploit its resources. Capabilities consist of a series of business processes and routines that manage the interaction among its resources. The third level competitiveness for a firm is a cross-functional integration and co-ordination of capabilities. And in the hierarchy, the highest level of competitiveness is core competence, is identified as the skills and areas of knowledge that are shared across business units within an organization and result from the integration and harmonization of strategic business units (SBU) competencies.”

The core competencies for a firm are those unique capabilities, which allow the firm in a unique position in a market. Hafeez *et al* (2002) opined that core competitiveness theory provides an alternative approach for achieving long-term competitiveness for firms, and in this context it has advantage over RBV model.

Dynamic Competitiveness

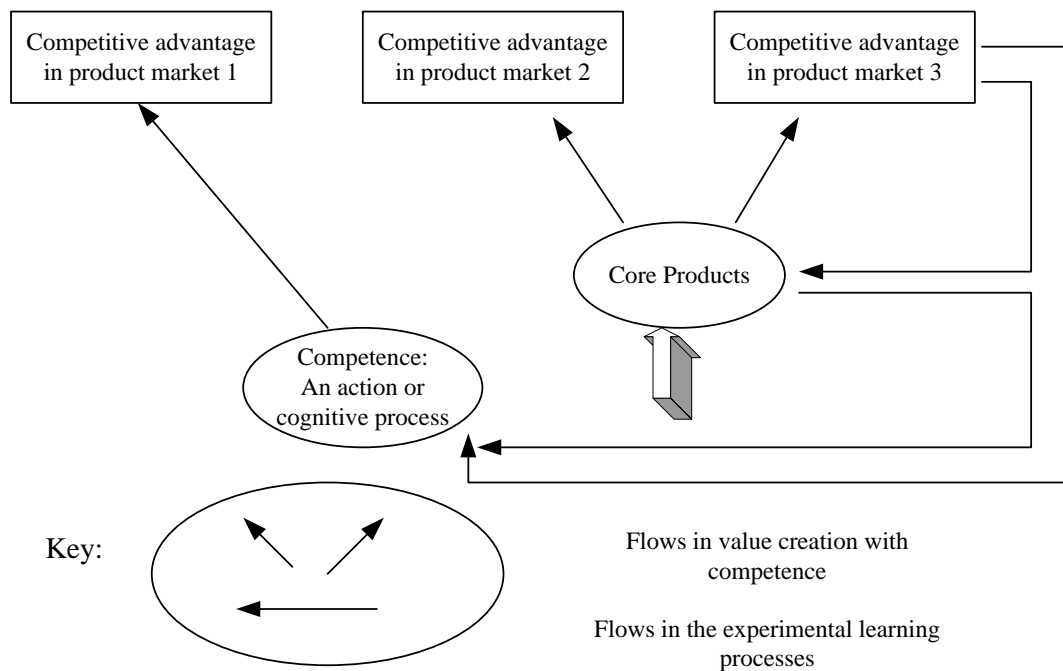
The Core competence theory does not incorporate the changes of business environment. Leonard-Barton (1992) argued that core rigidities exist in the core competence theory. It is not easy to change the core competences because they include a pervasive dimension of values. For example, values, skills, managerial systems, and technical systems that served the company well in the past are considered as typical rigidities. These rigidities make it hard for businesses to adapt to the external changing environment by using core competences. Therefore, it is necessary to consider the changing and dynamic characteristics in the business environment when addressing competitiveness. Dynamic competitiveness principle thus reflects an organization's ability to adapt to changing environment and achieve competitive advantage (Leonard-Barton, 1992). Previous literatures suggest that dynamic capabilities are the

key for any business to sustain their business competitiveness (Nelson and Winter, 1982; Teece et al., 1997; Zollo and Winter, 1999).

The dynamic competitiveness principle claims that the competitive advantage comes through the managerial and organizational processes of a firm, and is shaped by the strategic positioning of its assets, resources and available market channels (Teece *et al.*, 1997). The term “dynamic” is defined as “*the capacity to renew competencies so as to achieve congruence with the changing business environment.*”

Whilst there are various definitions and discussions on dynamic competitiveness, the essence of the concept refers to a firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments.

The framework by Teece *et al* (1997) about dynamic capabilities was composed by three elements: “business process”, “market position” and “paths”. Winter further examined the relationships among these three elements. A firm’s competitiveness is imbedded in the whole processes engaged by the firm while the processes will be affected by the firm’s position in the market as well as the evolution of the path. Karim and Mitchell (2000) opined that a firm should adjust its resources and capabilities in order to adapt to dynamic business environment. In order to establish the relationship between the concept of competence and competitive advantage, an alternative model is presented by Bogner *et al* (1999). As shown in Figure 2.7, the link between “competences” that centers on the actions and cognitions of individual actors in firms and “competitive advantage in a market place is identified. As the arrows indicate, it is a dynamic model. It is suggested that clear causal flows can be identified when terms are clearly set out. Firm-driven learning processes occurring both within the firm and in the marketplace cycle back to further improve firms’ competence.



Source: Bogner et al., 1999
 Figure 2.7 A dynamic model of competence

The application of dynamic competitiveness theory in real estate market suggests that real estate developers should adopt a dynamic strategy by adjusting their competitiveness focus to meet market changes. Otherwise, rigid competitiveness cannot help real estate developers sustain their competitive advantages. It is one of the major research issues in this study to find out the different core competitiveness indicators at different development stages based on the dynamic competitiveness theory.

2.4 Competitiveness for Real Estate Firms

The preceding section has built the theoretical foundation for understanding firm competitiveness. This section presents reviews on various studies on firm competitiveness within the context of real estate industry. The issues of firm competitiveness in real estate sector have long been concerned by the researchers as well as the practitioners. They have developed rich literature that helps developers in understanding and improving their competitiveness. The review in this section cover

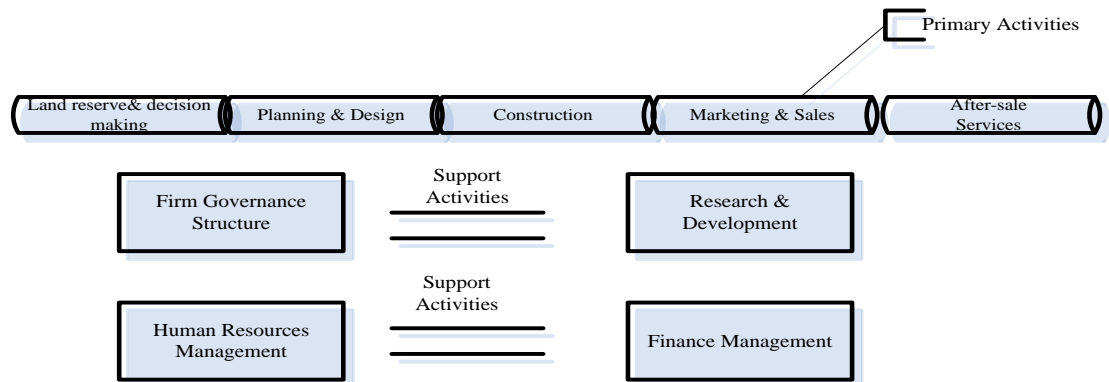
three aspects: (1) the implementation of Porter's theory in real estate sector (External competitiveness theory); (2) the application of resources-based, core competence approach and dynamic capability theory (Internal competitiveness theory) in real estate sector; and (3) research for application on frameworks as well as other approaches of achieving competitiveness for real estate developers in China context.

2.4.1 External Competitiveness Theory in Real Estate Industry

Porter (2002) presents two critical factors affecting real estate business' competitive advantage, including lower cost and differentiation. He opined that real estate firms employing lower cost strategy can achieve competitiveness across many processes, including lower land bidding price and delivering a project with lower construction cost. He also advocated that "Differentiation is the ability to have some unique skills or resources that allow you to command a premium price." In line with this, real estate firms with innovative construction design and large quantity of land bank can get higher market performance (Porter, 2002).

Many researchers appreciated Porter's (1980; 1985) theory by orienting its application within the real estate industry. By applying Porter's Diamond Model (Porter, 1990), Sun *et al* (2010) established the competitiveness factors model in real estate market, and divide the factors into four key categories. These four categories are productivity element, demand constraint, the strategy or structure of relevant and supportive industry and corporation, and horizontal competition. The research provides a much more comprehensive understanding of the interactions between competitiveness factors of real estate industry, and introduces structural equation model to quantitatively analyze the contribution of each factor to competitiveness.

By employing Porter's value chain model, Zhang *et al* (2010) presents an alternative value chain model for a real estate firm as shown in Figure 2.8.



Source: Zhang *et al.*, 2010

Figure 2.8 The value chain model (VCM) for REEs

In the above model, Porter's value chain method (VCM) is applied into the real estate industry to help a real estate firm to identify the areas or activities where the firm's core competitiveness indicators exist. The value chain activities for real estate industry are different from the manufacturing industry. The major activities in real estate industry include land reserve, decision making, planning and design, construction, marketing and property management. By understanding the value chain of these activities, a real estate firm can identify its strength and competitiveness. For example, in the marketing phase of China Vanke's value chain-a leading developer in China mainland, they adopted customer oriented strategy by increasing the sales of housing. For most of Vanke's projects, the design, construction, property management chains were delivered to the specialized companies for achieving value-added activities. Value chain approach helps Vanke gain competitiveness in the market.

2.4.2 Internal Competitiveness Theory in Real Estate Industry

Previous researchers have introduced the RBV theory and Core competence theory into the real estate industry. These theories are effective to help real estate firms in seeking competitive advantages. Some scholars believe that the competitiveness of

real estate firms come from the resources that they obtained, such as human resources, capital resources and land resources (Guo, 2005; Li and Yan, 2006; Yuan and Du, 2006). Others consider technology innovation capability, entrepreneur capability, marketing capability and integrated coordination capability as the competitiveness of real estate firms (Shi and Jia, 2005; Yang and Sang, 2004; Zhang, 2007). Luo *et al* (2006) pointed out that the core competitiveness for real estate firms is the organic integration of the business skills and operational mechanism which has formed into the unique competitiveness. These competences are hard to imitate by other competitors. Rong (2002) defined the concept of real estate enterprise competitiveness and established a set of key factors that affect the competitiveness of real estate enterprises. For example, these key factors include human resources, fund resources, land resource, marketing and planning capacity, designing capacity and technological innovation capacity. Adas (2002) presented a model for helping real estate firms identify unique resources across organizational key areas such as management systems, techniques, training and staff development, and organizational structure. Guo and Zhang (2003) opined that unique nature in human resource, capital, house product, custom service and brand is the key in cultivating core competence. A recent study by Li *et al.* (2009) suggests that the developer's unique financial competency, market coverage and management competencies are vital to its competitiveness. Bomba (2000) used three case studies to demonstrate that the competitiveness of real estate firms should include the core competency to meet their customers' needs, and evolving their core competency to meet the changing trends based on core competence theory. When the business environment changes, the competitiveness for real estate companies changes accordingly. John and Mike (2007) pointed out that real estate companies could no longer remain competitive based on the traditional sources

of competitive advantages (i.e., product, innovation, market dominance, financial resources and economies of scale). He argued that the competitive advantage for the future lies in the real estate organization's human resources.

However, it seems that few other studies have explored the applications of dynamic capability principle in the real estate industry. In fact, real estate business subjects to more dynamic environment in comparing to other industries. It is therefore essential to adopt a dynamic approach to understand a real estate firm's competitiveness.

2.4.3 Research for Application in China

With reference to the Chinese real estate market, a number of practical research reports have been addressed in studying the competitiveness for real estate firms. The representative studies are "Research report on Chinese Top10 real estate developers", "China Business Competitiveness Monitor (CBCM) System" and "Research report on the most influential listed real estate firms in China" (2006). The details are shown in the following sections.

The study on the Top 10 Real Estate Developers in China

The research on the Top10 real estate listed developers in China was conducted jointly by the Enterprise Research Institute of Development Research Centre of the State Council of China, the Institute of Real Estate Studies of the Tsinghua University and the China Index Academy (2003). This study was widely quoted as valuable references for identifying competitive developers. This report presents an index model of real estate developers' competitiveness. The main competitiveness indicators built in this model include total assets, total market value, prime operating revenue, total profits, enterprise scale, development potential, profitability. These indicators are used through a mathematical formula for the calculation of a competitiveness index value.

The method used in this report is learnt from the study for “500 tops of the world”, conducted by the “Forbes”. The results of the ranking order in 2008 are: China Vanke, China Overseas, China Hopson, Poly real estate group Co.,LTD, Beijing capital development holding Co.,LTD, Henda real estate group, Country Garden, Green town Co.,LTD, Wanda Group and Dahua Group.

The study on the China Business Competitiveness Monitor System (CBCMS)

The China Business Competitiveness Monitor (CBCMS) was established by the Industrial Economy Institute of Chinese academy of Social Sciences and the “China Business”. This system composes of 16 competitiveness indicators (See Table 2). The system is used to assess the competitiveness of various types of firms, including real estate firms. There are 38 real estate firms among 1,000 listed companies surveyed. According to the results of using CBCMS in 2006, the real estate businesses in the Chinese real estate market demonstrate an average level of competitiveness among all types of firms. According to individual competitiveness indicator for example, ‘the annual average sales growth rate in the past three years’ of real estate firms were lower, but ‘the growth of profit’ were higher.

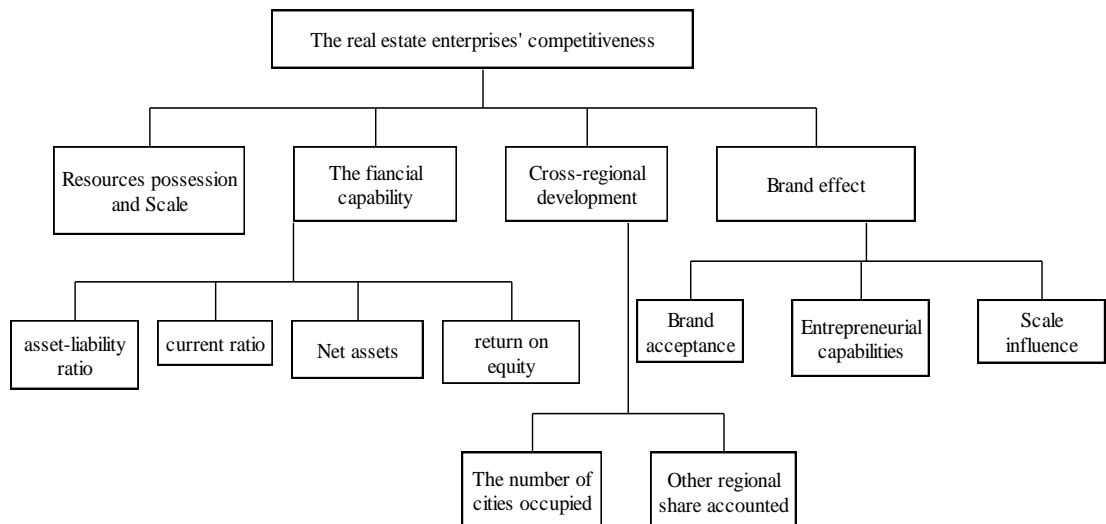
Table 2.2 Competitiveness indicators included in the China Business Competitiveness Monitor System (CBCMS)

Competitiveness indicator	competitiveness implications
Sales revenue	Scale
The annual average sales’ growth rate in the past three years	Growth capability
Total profits	Profitability
The average annual profits in the past three years	Sustained profitability
Net assets	Financial capability
Return on equity	Financial capability
The contribution rate of capital	Financial capability
Overall labor productivity	Human resources
Land reserve	Land resources
Effective corporate ownership	Mechanism
Three-year investment in technical transformation	Technology capability
Proportion of R&D to sales revenue	Technology capability
Number of patents	Technology capability
Public image	Brand awareness
Opinion survey by financial Reporter	Brand awareness

The competitiveness indicators included in CBCMS were carefully selected by experts in the survey, which have reflected the competitiveness from different perspectives. However, the CBCMS is not specifically designed for assessing the competitiveness of real estate firms. The system is a common framework for assessing the competitiveness of all the types of businesses. Nevertheless, real estate firms have their special characteristics, thus the competitiveness indicators used for assessing this type of firms should incorporate their characteristics. For example, the location of a real estate project is very important to the concerned real estate firm's competitiveness. For another example, real estate firms rely heavily on capital and land resources which determine largely their competitiveness level. In this context, the CBCMS is considered not very effective to assessing real estate firms' competitiveness unless adjustments are given to the indicators in the system.

The study on the Most Competitive Real Estate Firms in China

The Development Research Centre of the State Council of China conducted a research on "the most competitive real estate firms in China" (Development Research Centre of State Council, 2007). The study targeted to all types of real estate developers, both listed and non-listed real estate firms in the Chinese real estate market. In the study, a systematic framework for addressing competitiveness of real estate firms is established, which can be shown in Figure 2.9. From the figure, it can be seen that nine indicators are used. These indicators can capture the special characteristics of business environment for real estate developers in China. These typical competitiveness indicators include resources possession and scale capability, financial capability, brand awareness and cross-regional development capability.



Source: Edited from the research report of “The most competitive real estate enterprises”, 2007

Figure 2.9 The competitiveness framework for measuring the most competitive developers

By using the framework in Figure 2.9, the research centre conducted a comparative analysis on the level of competitiveness between all types of real estate firms in China. The analysis results have grouped all types of real estate firms into three categories: leading firms in the industry; the second-tier firms; and the third tier firms with weak competitiveness. The first group of real estate firms is considered as important in improving the overall competitiveness for real estate industry in China. Among them, China Vanke, Beijing capital development, China Overseas, New World China Land belong to this group. There are a number of second tier firms, such as Country Garden Holdings. Though Country Garden has just granted approval for listing, it has already demonstrated strong land reserve capability. After getting access to large amounts of funds in the capital market, the Country Garden Holding will catch up with the leading real estate firms in China. In general, small and medium real estate firms belong to the third category. They develop business mainly in a focused regional market with limited funds and resources, for example, Binjiang Real estate in Zhejiang Province belongs to this type. The above three typical studies on the competitiveness for business in China have adopted two approaches for

competitiveness assessment. One method is assessing competitiveness by using objective data for measuring indicator performance, such as the data from stock market, and this method is used in the study on the most competitive real estate firms. Another method is assessing competitiveness by measuring indicator performance through practical survey, for example, the study on the top-ten real estate firms and the CBCMS.

However, these studies have various limitations which can be highlighted as follows: The competitiveness indicators for addressing the competitiveness of real estate firms have not been formed systematically and they do not highlight the focus and key characteristics of this type of business. The assessment process for the performance of competitiveness indicators is mainly from a static view. In fact, the indicators for addressing competitiveness should be able to reflect the dynamic nature of real estate business environment. The static view limits the effectiveness of the competitiveness assessment methods developed in the previous studies. Therefore, there is a need for a new approach to assess the competitiveness of real estate firms, and this is aim of this study.

2.5 Summary

Competitiveness is always the key issue for study among economists, industrialists, politicians, and academics. This section has reviewed the concept of competitiveness, firms' competitiveness and the real estate firms' competitiveness. Typical competitiveness theories and the empirical evaluation models have been reviewed. The competitiveness theories are reviewed with focusing on two groups, namely, internal competitiveness theory and external competitiveness theory. It appears, nevertheless, there are very limited studies on the competitiveness for real estate firms,

even little with reference to the Chinese real estate market. In line with this, the following research gaps can be addressed: The theories and indicators adopted in the existing studies for assessing real estate firms are insufficient and fragmental. The dynamic characteristics of real estate business environment have not been incorporated in the existing models for assessing real estate firms' competitiveness.

In fact, along with the real estate firms' development, the competitiveness indicators would be different at each development stages, and this has not been addressed in the existing studies. Furthermore, some competitiveness indicators are more important than other in order to assess organizational competitiveness effectively, thus there is a need for finding out the core competitiveness indicators. And this has again not been addressed in the existing studies. These research gaps therefore lead to the formulation of the research aim and objectives for this PhD study.

**CHAPTER 3 DEVELOPMENT OF
CHINESE REAL ESTATE
INDUSTRY**

CHAPTER 3 DEVELOPMENT OF CHINESE REAL ESTATE INDUSTRY

This chapter develops an analytic framework to guide the investigation on the real estate industry development. Following the analytic framework, this chapter then explores the characteristics of the Chinese real estate industry from examining external environment and internal industry environment.

- *3.1 Introduction*
- *3.2 Historical development of real estate industry*
- *3.3 A framework for understanding the real estate Industry*
- *3.4 External environment for real estate industry*
- *3.5 Internal environment for real estate industry*
- *3.6 Summary*

CHAPTER 3 DEVELOPMENT OF CHINESE REAL ESTATE INDUSTRY

3.1 Introduction

This chapter is to investigate the development of the Chinese real estate industry. The understanding on the industry's development will contribute directly to studying the real estate firms' competitiveness since the organizational competitiveness is closely associated with the industry background and environment. This chapter firstly studies the historical development of real estate industry, and then develops an analytic framework to guide the investigation on the industry development. Following the analytic framework, this chapter then explores the characteristics of the Chinese real estate industry from examining external environment and industry environment. The understanding on the Chinese real estate business environment provides solid foundation to identify the competitiveness indicators for real estate developers in China.

3.2 Historical development of real estate industry

In 1978, the reform and opening-up policy started in China and it is followed by the initial development of real estate industry in the late 1980s. The current Chinese real estate industry does not have a long history, and its development process can be divided into four phases. The initiation and exploration phase from late 1980s to 1991; the growing and expansion phase from 1992 to 1994; the contraction and recession phase from 1995 to 1997; the recovery and continuing expansion phase since 1998 to the present.

Before the formation of real estate industry (before early 1980s), China's real estate was characterized by *you chan wu ye*, or literally, "having a stock without an industry." Under the Chinese socialist ideology and the planned economy, land was not a commodity and was nontransferable, while housing was allocated as a welfare entitlement. After China opened its doors to the outside world in 1978, many problems in the old housing allocation system were gradually recognized by a more market-oriented government. To solve these problems, housing reform was first introduced on trial basis in Xi'an and Nanning to experiment with market housing (Wang and Murie, 1996). In the 1980s, China established special economic development zones (SEZ) along the east coast to attract foreign investors. In these areas foreign investors could lease land for a certain period of time. Therefore land-use rights and land ownership were separated for the first time. Since then, a nationwide effort has been made to sell the state-owned housing stock (Tolley, 1991). In the mid-1980s, land user fees were introduced, followed by the amendment of the Constitution in April 1988. In 1981, the first real estate company was founded (Zhang, 2001).

Phase 1: The initiation and exploration phase from late 1980s to 1991

In this stage, the real estate marketization process was formally initiated. The most significant changes occurred in the late 1980s when the National Bureau of Land Administration was established. This Bureau was responsible for land policy reform, land allocation mechanism, land acquisition and the monitoring of land development. In 1987, land-use rights were allowed to grant and transfer in Shenzhen, and three initial negotiations concerned rights granted to domestic enterprises (Zhu, 1994). This development led to the establishment of the land market step by step until 1991 when land users were finally allowed to let, transfer, rent, and mortgage land-use rights. In

this phase, both newly-built and existing housing are open for transaction in the market.

Phase 2: the growing and expansion phase from 1992 to 1994

By 1992, housing reform policies had been approved for 25 provinces, autonomous regions and municipalities directly under the central government (Shaw, 1997). During this period, housing financial system was initiated and implemented on trial basis, including housing savings and loans, mortgages, flexible repayment terms, housing insurance and housing banks (Leading Group for Housing Reform, 1993). The introduction of housing financing system from 1992 up to 1994 led to the boom period in the Chinese real estate market, with large-scale land leasing and transaction, which stimulated real estate speculation. In 1993, the boom in Hainan property market occurred. The boom then resulted in the bubble in Hainan real estate market. The bubble burst in the middle of 1993 following belt-tightening measures by the central government and developers abandoned numerous unfinished buildings. Bad bank loans involved in the projects amounted to 30 billion yuan, and the local government spent 10 years rebuilding or tearing down the incomplete buildings (Huang and Yang, 1996). In fact, real estate development reached its peak in 1992 and 1993, the investment on real estate increased by 117.5% in 1992 and 165% in 1993. The percentage of the real estate investment in the total investment in fixed assets increased from 6.3% in 1991, 9.6% in 1992, and 15.5% in 1993, to 16.0% in 1994.

Phase 3: the contraction and recession phase from 1994 to 1997

In the year 1994, the Urban Real Estate Law was introduced and adopted, providing legal framework for real estate market at the central level. In complying with the law, local governments at the provincial and city levels formulated measures to regulate

the local real estate market and guide the use, assignment, and transfer of land use rights. The industry experienced unprecedented growth during the period 1994 to 1997. However, there were signs of overheating in the market. In many urban areas, the demand for commercial and residential properties was overestimated. As a result, over-construction for real estate occurred as too many developers rushed into this sector. Nevertheless, this boom was hit hard by the 1997 Asian financial crisis. There was excess supply of real estate, which forced some real estate developers particular those who focused on luxury developments to cancel or suspend operations. For office building market, construction virtually ceased, as funding dried up. Uncompleted buildings were common, a painful consequence of the pre-crisis building boom (Tse, 2000).

Phase 4: the continuing expansion phase since 1998 up to the present

The Chinese real estate market is now facing the real challenge of setting up a true market. In 1998, under the leadership of Premier Zhu Rongji, a new housing policy was formulated; stating that by the end of the year the system of welfare housing provision characterized by in-kind allocation should be abolished and replaced by the housing provision through real estate markets (State Council, 1998). This policy specified that real estate user should be granted with land-use-right for property development. This indicated that the central planning approach for real estate was officially discarded (Buckley and Kalarickal, 2005). The reform on legal system for real estate industry resulted in three most significant changes in the Chinese real estate industry: the change of the real estate project financing arrangement from traditionally governmental free allocation to commercial loan; the change of the land acquisition

for real estate project development from governmental free allocation to competitive tendering, and the change of the housing assignments from welfare system to commercial housing. The application of commercial housing system brought rapid development of various types of real estate developers in the Chinese real estate industry, including state-owned firms, collective-owned firms, and sino-foreign joint ventures. According to the China Statistics Yearbook (2008), in 1996, the total number of enterprises for real estate development was 23190 and 62518 in 2007. By 1998, there were 21,286 real estate developers in China (Yearbook of China Real Estate Market, 1999). The real estate industry was further fuelled recently by the Beijing Olympics held in August 2008, which resulted in a significant increase in construction projects in China. Currently the Chinese Government considers real estate industry as one of the main sectors in the Chinese economy (Okpala, 1994; Chen, 2002). The report by the National Bureau of Statistics of China shows that the gross floor space of Buildings completed in 2007 was 2039.93 million m², from null in early 1980s (NBSC, 2008). The per capita floor space of residential building in urban areas increased from 6.7 m² in 1978 to 27.1 m² by the end of 2006 (NBSC, 2007). The real estate industry has important influence on other economic sectors. However, in 2008, the global financial crisis which is caused by the US subprime loan crisis has exerted huge impact on the whole world financial market. China is inevitably involved in this global financial storm. Since 2009 until now, the post financial crisis has increased the frequency of market turbulence and uncertainties of real estate industry in China. This enabled more real estate developers to realize the significance of cultivating the competitiveness in the market.

3.3 A framework for understanding the real estate industry

In order to examine the characteristics of the real estate industry in China, it is useful to gain an understanding on real estate business environment. An analytic framework is structured to define the scope of areas for study and investigate to which extent these areas are examined. Previous studies suggest examining business environment using two attributes. For example, Newcombe (1990) described construction business environment with two groups of factors: general environment factors (including politics and law, economics, sociology and technology) and competitive environment factors (including finance, plant, labor, management, suppliers, subcontractors, consultants and clients). The study by Shen *et al* (2004) characterizes construction business environment by providing a framework including regulation frame, business relations and general environment. Others consider business value chain activities as the major component in describing the characteristics of real estate industry (Roulac, 1999; Zhang *et al.*, 2009). These works provide valuable references for constructing a profile of the Chinese real estate business environment, as shown in Figure 3.1 and Figure 3.2. From these profiles, readers can have a comprehensive picture for understanding the Chinese real estate industry and the status of developers.

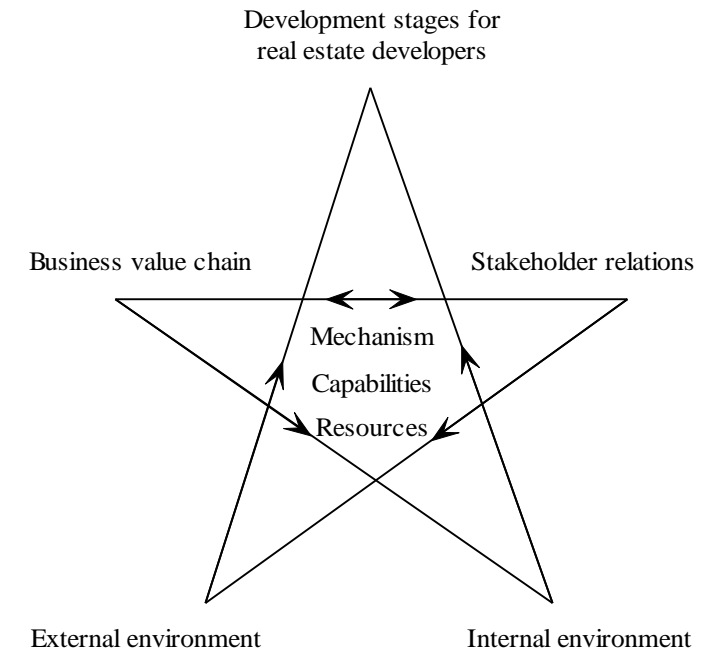


Figure 3.1 A conceptual profile of real estate industry in China

As shown in Figure 3.1, five angles of the five-star denote five components: external environment, industry environment, business value chain, stakeholder relations and development stages for real estate developers. There are inter-relations between the five elements. The real estate businesses are developed based on the internal and external environment. The communication with external environment lies in their relations between the developers and stakeholders involved. In the communication process, the policy, social, economic and environmental aspects will induce impacts on the developers. On the other hand, the internal environment mainly concerns the business value chain during the real estate development stages, e.g., planning, design, construction and property management. Various real estate stakeholders can influence real estate developers through business value chain activities during the project development. All of these inter-relations will generate influence on the competitiveness of real estate developers at different development stages. By examining the effects between stakeholders and business value chains on the

developers, the competitiveness of real estate developers can be studied through three dimensions namely, resources, capabilities, and mechanisms of real estate developers.

A further profile that illustrates how the characteristic of real estate industry be studied can be found in Figure 3.2. Figure 3.2 reveals the main body inside the 5-star figure 3.1. For example, external environment is characterized by economic, social, policy, legal, technological, and ecological environment. Internal environment of the real estate industry is characterized by entry barrier, bargaining power, buyer power, substitute, competitive rivalry.

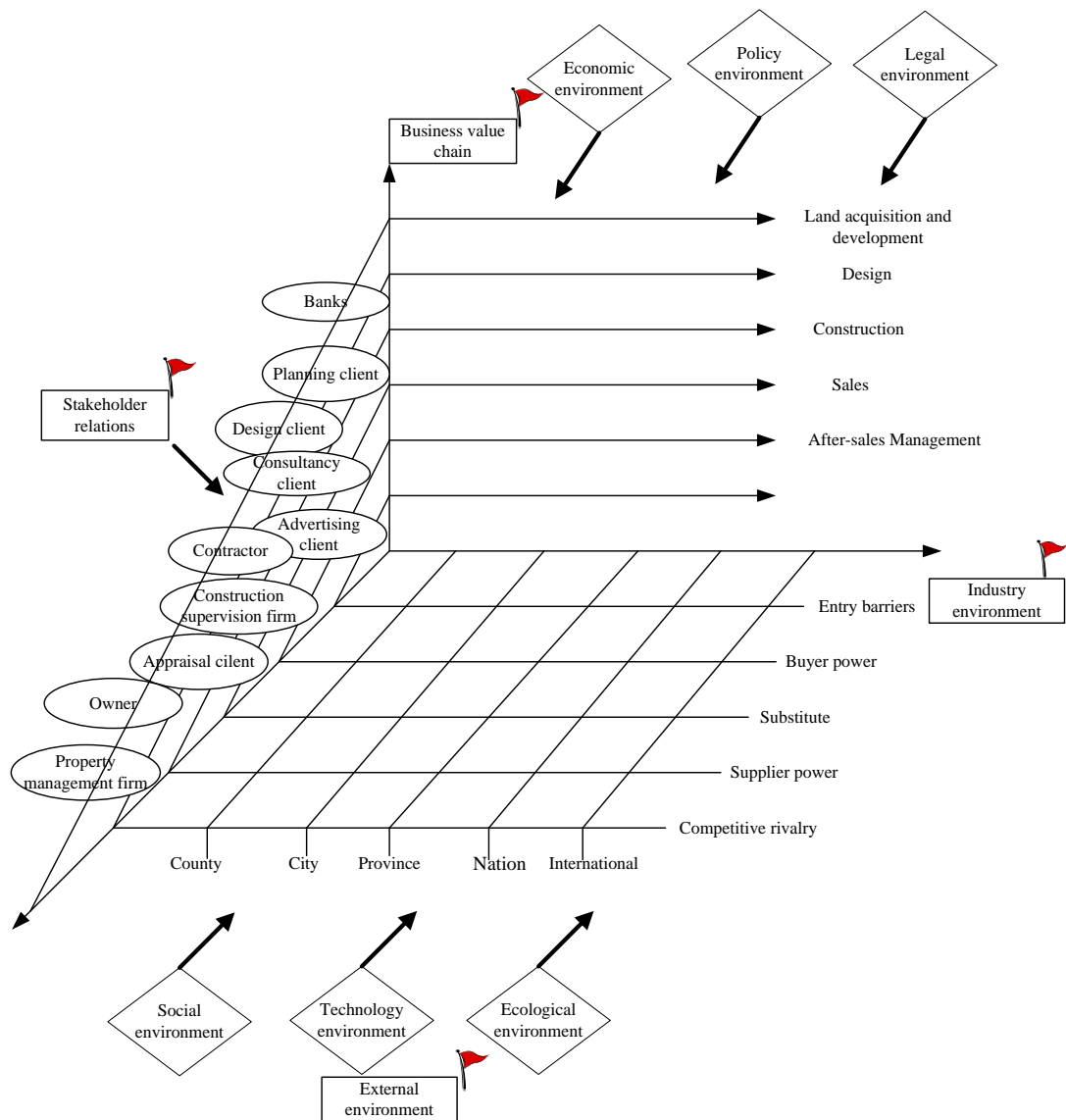


Figure 3.2 A profile of real estate business environment in China

The external environment and internal environment will be analyzed in the next sections, and Chapter 4 will address other attributes in the model (Figure 3.2).

3.4 External environment for real estate industry

Business environment refers to the internal and external forces driving an industry or an organization. The severity and impact of these forces on the industry have to be identified, analyzed and evaluated. The external environment is a set of complex, rapidly changing and significant interacting forces that affect the industry's performance in the market. External forces are not controlled by the industry, but they may be influenced or affected by the industry. It is necessary for real estate industry to understand the environmental conditions so that they can respond to meet needs and trends in the targeted markets and achieve business performance.

The external environment in the contents of this study consists of economic, technological, policy, legal, social, and ecological. Though non-controllable, these forces require a response in order to keep positive actions with the targeted markets. Real estate industry in China is commonly known for its fast-moving, transition from a planned to a market economy and towards an increasing integration into the world community, huge size in terms of the demand. The following sections will address these aspects.

3.4.1 Economic environment

Real estate industry in general is a very cyclical industry, and an individual developer is greatly affected by economic trends and the industry's outlook. China has experienced phenomenal economic growth over the past twenty years; the world has witnessed the amazing and rapid economic transformation in China. This growth has

led to, by 2006, China to become the fourth largest economy in the world, ranked in front of UK and France (see Table 3.1). It can be seen from the figure, by the end of 2015, it is expected that China's GDP will exceed Japan, making China the second largest economy in the world. It can be seen that the average annual growth rate of China's GDP since 1997 is more than 8%, reached a new height of 33535.3 RMB billion by 2009. In 2003, the Per Capita GDP reached the record high of 1000 USD, according to the Nation Bureau of Statistics (NBS), which means a significant milestone has been reached in eliminating the poverty of the 1.2 billion people. Furthermore, it is estimated by Deutsche Bank Research (2006), that China is expected to have, alongside India, the strongest rate of annual average GDP growth among the major economies over the coming 15 years.

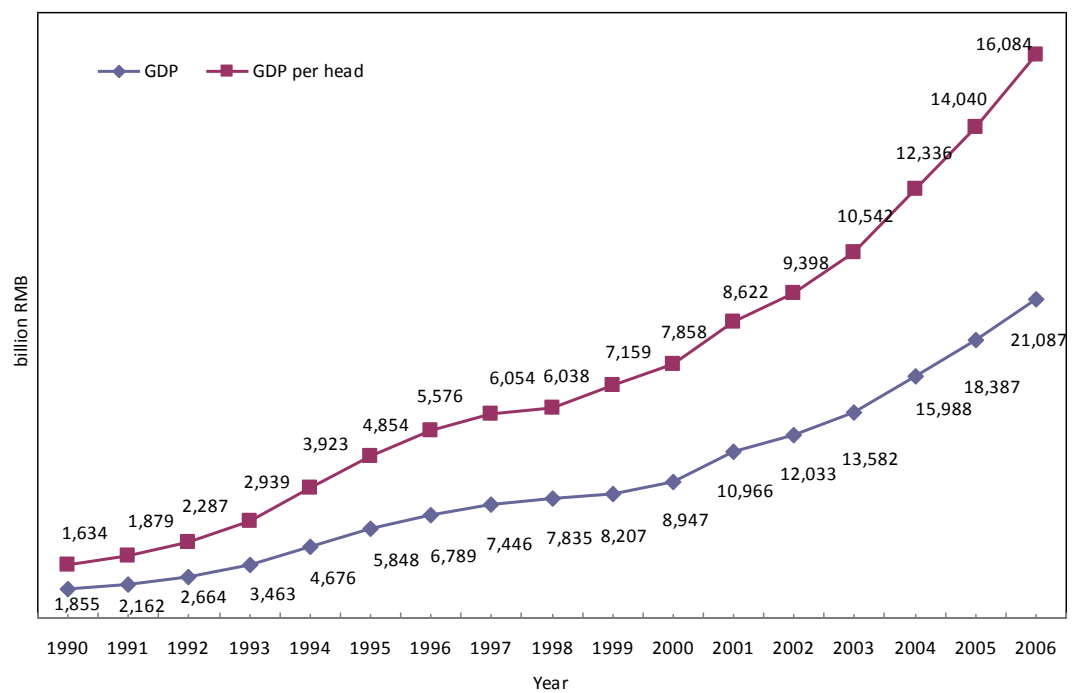
Table 3.1 Top ten World Economies: Ranked by GDP, US \$ Billion

Country	1995	Country	2006	Country	2010	Country	2015	Country	2020
US	7398	US	13237	US	16103	US	20278	US	25624
Japan	5246	Japan	4351	Japan	5908	China	8235	China	13466
Germany	2525	Germany	2905	China	4753	Japan	6977	Japan	7655
France	1572	China	2624	Germany	3719	Germany	4122	UK	5212
UK	1135	UK	2376	UK	3153	UK	3858	Germany	5043
Italy	1128	France	2237	France	2967	France	3485	France	4479
China	761	Italy	1853	Italy	2413	Italy	2782	Italy	3533
Brazil	704	Canada	1271	Russia	1749	Russia	2429	India	3508
Spain	597	Spain	1221	Spain	1740	India	2228	Russia	3088
Canada	591	Russia	986	Canada	1544	Spain	2130	Spain	2821

Source: RREEF Research, Global insights, World Bank (2006).

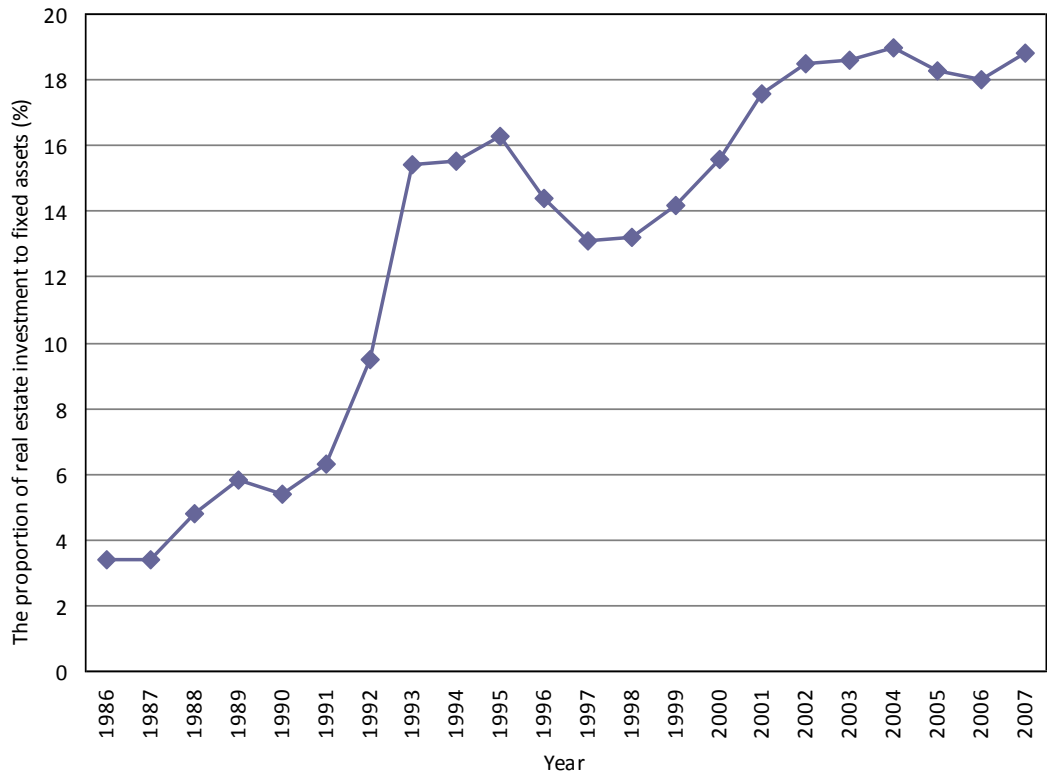
On the other hand, the real estate sector in China contributes largely towards the gross domestic product (GDP). As shown in Table 3.2, 4.8 percent of the country's GDP is contributed by the housing sector in the year 2007. In the next five years, this contribution to the GDP is expected to rise. Real estate development in China has been thriving, due to its rapid economic growth, rising household incomes and massive rural-to-urban migration (Wu *et al.*, 2009). The high GDP growth in China has been sustaining, and this is largely contributed by the substantial growth in real estate investment, as shown in Figure 3.3 and 3.4. In fact, the real estate capital

investment has been growing at a faster pace. The proportion of real estate investment to fixed assets has increased from 3.4% in the year 1987 to 18.8% in the year 2007 (see Figure 3.4). Besides, the proportion of real estate industry to total GDP rises from 3.5% in 1990 to 4.2% in 2008. The number of employment in real estate industry has risen from 940,000 in 1998 to 1,727,000 in 2008. This indicates that the overall scale of real estate industry becomes ever increasing in the past 20 years.



Source: NBSC (2010), <http://www.stats.gov.cn>

Figure 3.3 The growth of GDP and GDP per head in China (from 1990 to 2009)



Source: NBSC (2010), <http://www.stats.gov.cn>

Figure 3.4 The proportion of real estate investment to fixed assets

Table 3.2 The real estate development in China

Year	The proportion of Real estate industry accounted for GDP (%)	The proportion of Tertiary industry accounted for GDP (%)	Quantity of employment in real estate industry (10,000 person)	Quantity of employment in tertiary industry (10,000 person)
1990	3.5	31.6		
1991	3.5	33.7		
1992	4.1	107		
1993	3.9	33.7		
1994	4	33.6		
1995	3.9	32.9		
1996	3.7	32.8		
1997	3.7	34.2		
1998	4.1	36.2	94	18860
1999	4.1	37.7	96	19205
2000	4.2	39	100	19823
2001	4.3	40.5	107	20228
2002	4.4	41.5	118	21090
2003	4.5	41.2	120.2	21809
2004	4.5	40.4	133.4	23011
2005	4.5	40.1	146.5	23771
2006	4.6	40	153.9	24614
2007	4.8	40.4	166.5	24917

3.4.2 Social and cultural environment

Social and cultural forces have also affected the development of real estate industry. However, their influences are difficult to predict. It is important for real estate developers to understand and appreciate that the social and cultural values of the environment can affect their business activities. For example, changes in social and cultural environment can affect real estate customer behavior, which in turn affects sales of real estate products. The following discussion will highlight the effects of social and cultural environment to the Chinese real estate by examining two major social and cultural factors, namely, the urbanization process and the demographic dividend in China.

Urbanization process

According to the Table 3.3, during the past 24 years, the population of China has climbed steadily from about 1070 million in 1985 to 1334 million in 2009 – an increase of 24.7% during the period, with an average annual growth of 1.03%. At the end of 2009, there are 712 million (53.4%) and 622 million (46.6%) population residing in the rural and urban areas respectively (See Table 3.3). The United Nation Population Division forecasts that the degree of urbanization in China will grow to 50% with an urban population of 745 million by 2020. This urbanization trend is widespread across China. The country now has 113 cities with a population over one million people and 3 mega cities with more than ten million people.

Table 3.3 The urbanization process in China

Year	1985	1997	2000	2009	2025
Total population (a hundred million)	10.7	12.36	12.9	13.34	15
Urbanized population (a hundred million)	2.1	3.7	4.13	4.7	10

hundred million)					
Urbanization ratio (%)	20.3	30	32	46.6	66.7

Source: China real estate information, The Yearbook of China's Cities 2006, China Statistical Yearbook 2006, World Bank report, 2008.

The increased urbanization rate will push cities continue to grow in size, especially the more economically developed cities. Infrastructure and public services such as transportation network, utilities, education and healthcare facilities, as well as housing, will need to expand to cope with the growing population. It is estimated that at least 15 million new residential units in cities are required over the next 5 years, which is driven by this urbanization (DTZ, 2006). The dramatic transformations in the urban structure of the Chinese economy stimulate strong demand for all forms of real estate, especially in the major cities. According to the estimation from the World Bank, by 2015, approximately half of world's new building construction will take place in China (Hammer *et al.*, 2006). The vast majority of these projects are large commercial office buildings with the construction area between 100,000 and 150,000 m², and residential developments with the construction area more than 500,000 m². China's entry into the World Trade Organization and its subsequent investment boom is driving new real estate development across the nation, and for example the Beijing Olympics in 2008 will result in billions of dollars in new construction in the capital (Langer and Watson, 2006).

Furthermore, according to Table 3.4, if the urbanization ratio reaches to 50% in the year 2020 in China, its total population will be 1490 million. According to the living standard proposed in the year 2000, the average per-capita living space for urban residents is 20 m²/ person. By this standard, there is a demand for 6640 million m² new housing until 2020. If this standard increased to 25 m²/ person, the demand will be much larger, up to nearly 8300 million m² new housing until 2020.

Table 3.4 The demand for housing development in the coming 50 years (100 million m²)

Average per-capita living space for urban residents	2010	2020	2050
20 m ² /person	29.4	66.4	141.4
25 m ² /person	36.75	83	176.75
30 m ² /person	44.1	99.6	212.1

Source: Ark marketing research and consulting, Research report for real estate market in China, 2002.

Demographic dividend

Demographic dividend is a rise in the rate of economic growth due to a rising share of working age people in a population (Bloom and Jeffrey, 1998). In China, the development of demographic dividend is divided into two periods: 1980-1995 and 1995-present (Mason and Kinugasa, 2004). During 1980-95, the Chinese economy achieved rapid growth with the average of 10.2% growth annually. This development has brought a large number of urban residents who are mainly industrial workers and originally from rural areas. However, the industrial sector did not have sufficient capacity to absorb over 10 million new workers every year. The level of industrial development was low, while the reform of state-owned enterprises and the financial system was gradually advanced under the reform and open-door policy. On the other hand, during the period of 1995-present, the Chinese economy has been continuing to grow. While the growth rate of the productive age population has already started to decline, growth has been underpinned by a high savings rate equivalent to over 40% of GDP, and by buoyant investment driven by an influx of foreign companies.

The population structure in China has the advantage that productive labors assume large proportion in age structure. According to World Bank (2007), the China's advantageous population structure has contributed to 27 percent of economic growth, a similar figure to that in Japan and Singapore, but a country's demographic dividend usually lasts for 40 years until the aging problem looms. Nevertheless, China's demographic dividend will end around 2015.

As mentioned above, much of the housing boom occurs because of demographic shifts. It is obvious that older baby boomers (first half of the demographic dividend) were scaling down either in size of home or price of home and moving. However, younger baby-boomers (second half of the demographic dividend) are becoming the middle- income class, and they are able to buy larger flats due to their expanding family size. The people with the age 20 to 60 are the wealth creation generations. This age group currently accounts for over 60 percent of the total population in China. It is expected that there will not be any significant change in this special population structure for at least 10 years. Following a survey in 2005, the National Bureau of Statistics concluded that an annual household income of RMB 60,000 to 500,000 defines what may be called the middle-class. Under this definition, about 20% of the population falls into this category.

It is identified by the report of World Bank (2007), the consumption pattern in housing has changed from basic towards more value added in terms of comfort and services following the improvement of living and the rise of middle-income class.

3.4.3 Policy and Legal Environment

There was virtually no real estate industry before early 1980s when the economic reform programs were introduced. Under the old planned economy system in China, construction related activities were treated as public services rather than business. Housing was centrally planned and allocated with free of charge to citizens, called welfare housing system (Yu, 2006). The welfare housing system was adopted over three decades in China from early 1950s, during which there was no real estate market for transaction or lease (Tang *et al.*, 2006). However, the old planned economy system brought up serious problem of housing shortage. It distorted the balance between

supply and demand as land was not allocated according to the economic efficiency but largely according to political criteria.

In the process of promoting the real estate industry, the Chinese Government has been introducing various laws and regulations for guiding the development of industry. For typical examples, the Regulation for the Implementation of Land Administration Law of the PRC was issued by the State Council in 1991 (SC, 1991a), the Interim Regulations on Granting and Transferring the Land Use right in Cities and Towns issued by the State Council in 1991 (SC, 1991b), the Implementation Plan for a Gradual Housing System Reform in Cities and Towns issued by the State Council in 1998 (SC, 1998). In 1998, the Chinese Government declared the abolishment of the old welfare house system (SC, 1998), which specified that real estate user should be granted with land-use-right for property development. On the other hand, it demonstrated that the central planning policy has largely been discarded (Buckley and Kalarickal, 2005). There are other relevant laws and policies regulating the practice of real estate business activities, with concerning the special aspects of land title and supply, urban planning, environmental protection, real estate pre-sale and sale, land acquisition and finance, property management, title transfer and registration (Wang and Murie, 1996; SC, 1998; Valletta, 2001; Lou and Palomar, 2006). When the housing prices began surging in 2006, the State Council published six regulative measures in May to adjust the structure of residence supply, focusing on the development of medium and small houses to satisfy the demand of ordinary buyers. These policies were aimed to stabilize the housing price and not to reduce it. Despite the measures, because of China's fast growing economy and the high deposit level in banks, housing prices continued to surge. In 2007, tighter financing policies were implemented for supervising the real estate market. The central bank raised lending

rates by six times during the year, directly increasing the burden of housing mortgage loans. The central bank also raised the interest rate for residential property loans in August of the same year.

Furthermore, in December of 2007, the central bank decided to execute yet another tightening monetary policy in 2008, which further increased the difficulty in obtaining housing loans. Meanwhile, the publication of land reserve regulations prevented developers from hoarding land. Besides controlling housing prices, the government also launched the housing security system for families with low income in August 2007. More low-cost housing will be provided to this group of families. The new policy has a new focus that aims to improve the living condition of the residents from developing real estate, not the purpose of boosting economic growth.

By adjusting policies, the Chinese government has been improving the policy environment for ensuring that the real estate development is healthy and contributes to the development of the country. As the Chinese government has been cautiously implementing its reform program, laws and policies have been issued on a trial basis in many cases. In this practice, revision and amendments of policies are often used as tools to adjust the mistake or error committed. Nevertheless, the changes and reversions on policy present risks and uncertainties to real estate developers' investment plan. Therefore, how to manage these risks becomes important business strategy for developers. The risk management for real estate developers will be addressed in chapter 8.

3.4.4 Technology Environment

The technological environment refers to new technologies, which create new product and market opportunities. Real estate firms need to be aware of new technologies and

try best to apply them in order to turn these advances into opportunities and a competitive edge. Technology has a tremendous effect on real estate customers' life-styles, consumption patterns, and the economy.

The use of technology is considered as one of the way to improve the efficiency of the residential real estate market (Turnbull 1996, Yavas 1995, Greer and Farrell 1993). For example, the increases in the use of improved technology can reduce the search time for buyers. This reduction in buyer search costs (time) in turn increases efficiency in the residential real estate market. One such example is the advent and increased use of the Internet for real estate purposes (Kabatim, 1996; Royal, 1995). Innovations and improvements in computer software are also having significant impacts on areas such as leasing and property management.

On the other hand, the promotion of the sustainable development mission has been now shaping the practice of all business sectors, including real estate industry. The promotion of sustainable practices in real estate industry has resulted in the application of various green development technologies. A wide range of green technologies, such as green roof technology (GRHCC, 2003), solar systems (Ecotecture, 2006), HVAC systems (UNEP, 2003), the ground source heat pump technology, tinted window technology, plug and play power technologies have been introduced in real estate industry. However, there are several barriers for adopting green technologies in the real estate market. According to Bradshaw *et al* (2005), for example, he has opined that real estate developers were reluctant to adopt green systems as they consider that it would cause extra costs or involve more risks. Success of these technologies in the market will depend on design teams applying the proper integrated design approach and analytics to recognize opportunities and achieve

optimum performance that can meet the project goals. It is considered that green development can help developers gain competitive advantages, and this will be fully addressed in Chapter 7.

3.4.5 Ecological Environment

Given the rapid urbanization which will inevitably continue to take place in Asia in the coming years, a greener real estate industry will be a crucial action towards achieving a sustainable future for all of us. Many regions and countries in Asia have taken action to protect the ecological environment. For example, in Japan, real estate services firms are promoting their environmental efforts concerning office buildings in order to comply with relevant laws. Typical laws concern the Rational Use of Energy, the revision of the Tokyo Metropolitan Ordinance on Environmental Preservation, which aims for mandatory reduction of carbon dioxide emissions (Okamoto, 2009).

In China, there is clearly a huge opportunity, and arguably a responsibility, for stakeholders within the China real estate industry to address ecological issues. Building codes and other regulations are used to improve building's performance at the design stage. It is expected to impose real estate industry to put more effort into the sustainable performance of buildings. A combination of good design with good management will deliver a good result. As more robust building regulations come into force and more low carbon buildings are constructed, building management is going to take on a much more important role in the future (CBRE, 2010).

However, there are some challenges for real estate industry to implement the low-carbon business strategy. One challenge comes from the building design methodology. Existing building design methodology separates the concept design and

technology design stages. The architect finishes the concept design and passes it downstream to the structural design team, HVAC design team, building services team and so on. Under this approach the architectural design has too much control over the direction of the project. This kind of methodology requires more time and expense to change the concept as engineers can only follow the design concept created by the architects. This kind of pipelining methodology has caused the failure of a number of energy saving building design projects in China. It is believed that an integrated design methodology needs to be developed so that the design engineer is involved in the project at an earlier stage and the whole design team works together. Furthermore, Building management is another challenge. Obviously, the energy savings achieved by low carbon buildings occur during their operation and life cycle, rather than at the design concept stage. Without good property management, even the best designed project will not work as expected. There is a need for a methodology for building management using best practices in order to provide a guide for low carbon property management (CBRE, 2010).

3.5 Internal environment for real estate developers

The above external environment analysis indicates that there are various external forces affecting real estate business whilst there are good potential opportunities in the real estate market. Therefore, in order to grasp these opportunities, there is a need to analyze internal environment within the real estate industry for helping developers to understand the competition conditions in the local industry. This can help developers take appropriate actions in competing. Industry structure is the core characterizing business internal environment. Porter's five force model will be adopted in the following sections to analyze the internal business environment for real estate developers in China.

According to the study by Porter (1980; 2008), there are five major forces which determine the industry's structure and influence profit: threat of new entrants, competitive rivalry within industry, bargaining power of clients, bargaining power of suppliers, and threat of substitute of products. The five forces have been applied into real estate industry as addressed in separate sections as follows (See Figure 3.5).

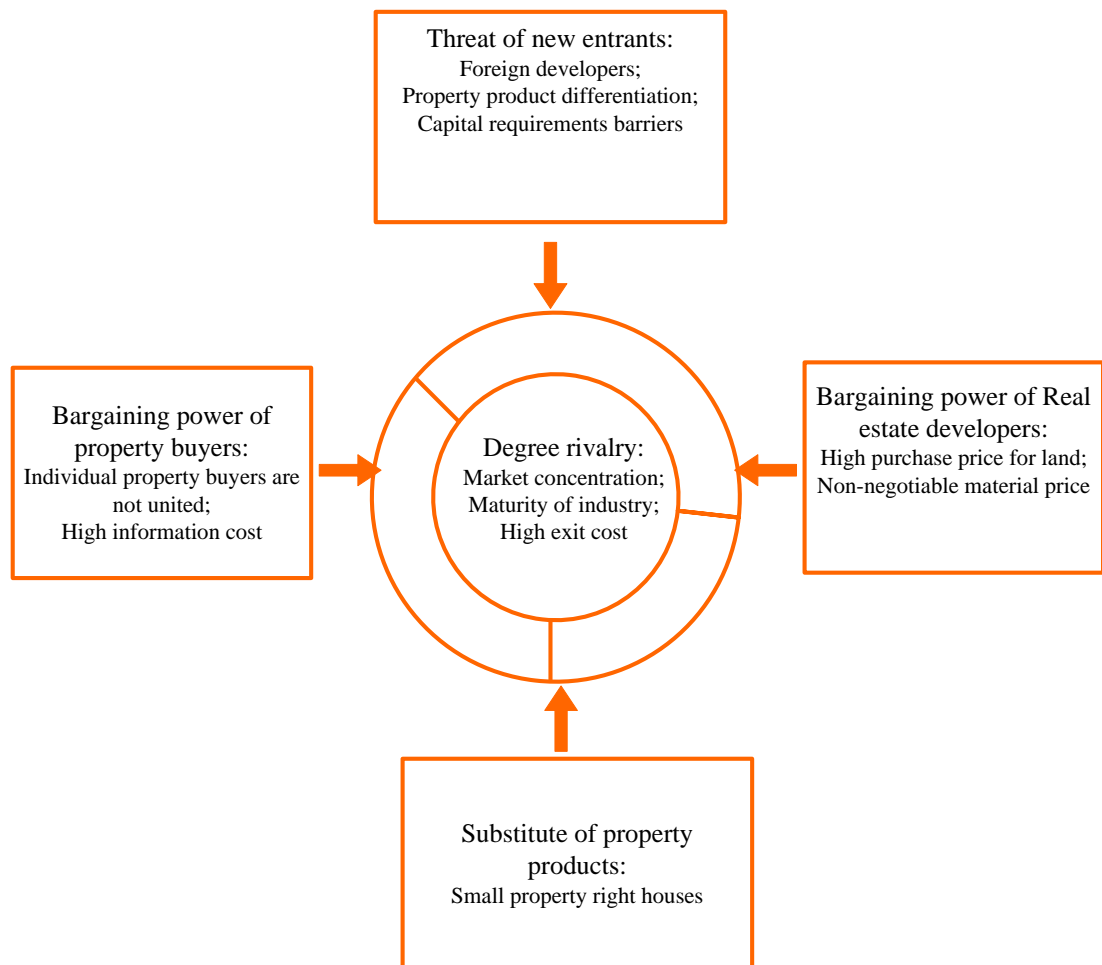


Figure 3.5 The five forces that shape the real estate industry competition

3.5.1 Degree of Rivalry among existing Competitors

There are three major factors determining the extent of competitive rivalry in real estate industry: the market concentration, the maturity of real estate industry, and the high cost for exit from market.

The market concentration in real estate industry in China is relatively low. Concentration ratio (CR) (Egghe, 2005; Bajo and Salas, 2002; Hatirli, 2000) was selected as the parameter to evaluate the market concentration for real estate industry. The values of CR₄ (the proportion of top four developers occupied the total) or CR₈ (the proportion of top eight developers occupied the total) are relatively low in China, which was no more than 10% (Zhang *et al.*, 2009). The concentration ratio in China real estate market is much lower in comparing to that in Hong Kong. For example, during the period of 1997-2004, nine major real estate enterprises in Hong Kong, including Cheung Kong Ltd., Sun Hung Kai Properties Ltd., Henderson Land Development Co. Ltd., New World Development Co. Ltd., have occupied 80% of the total market share (The Hong Kong Census and Statistics Report, 1997-2004). It is obvious that the low concentration ratio makes the competition among rivalry intensified. There is little monopoly in the market, and no large developers who have capacity to occupy a large market share, thus many small-medium developers enter the market and compete for resources and consumers, contributing to the intense competition in the market.

The real estate market in China is not mature with less than 30 years of development. The market grows along with the increase of customers in the market. As the real estate market is growing, developers have no pressure to find customers. Nevertheless, developers need to compete for the location of project, planning environment, property product design, property management and price making. Developers have to take appropriate competition strategy to compete with rivalry.

The high cost for exit from real estate industry indicates that it is difficult for developers to stop in the process of property project development. The production

process in real estate business embraces various lengthy activities, typically including site acquisition, site survey and formation, securing planning consent, finance arrangements, design, construction, and marketing (Barrett *et al.*, 1978; Healey, 1994). Each individual process involves with large capital and advanced expertise. If the developer has entered into real estate market, it is rather difficult for them to exit with so high cost. Thus only few businesses will enter into the market. This makes the degree of competitive rivalry in real estate industry smaller than other industries.

3.5.2 Threat of New Entrants (Barriers to Entry)

Identifying the possibility and probability of new entrants in real estate industry is critical because they can intrude on market share and profitability for existing competitors. There are several factors that will affect the new entrants in real estate market, for example, China' access into WTO, property product differentiation, capital requirements and government policy all affect real estate developers, which bring a lot of new entrants which present the threat to the existing developers.

As a WTO member, China will increase demand for foreign imports and open the services sector such as real estate market to foreign competitors. Foreign investment in real estate during the first nine months of 2002 accounted for 10.46 percent of all foreign investment in China. The Chinese government policy has lowered the entry barriers to the access of foreign real estate developers and investment, which brings new foreign competitors to the market thus induce more threaten to developers in China. On the other hand, many real estate related professionals, such as construction and installation industry, consultancy, financial and insurance industry from abroad will enter into Chinese market. Many major large international developers have established their branch or have been localized in China. These also increase the

number of competitors in the market, thus the competition becomes more intensive. The small and medium developers or specialist developers particularly have to face the threats of new entrants due to the low entry barriers.

Nevertheless, China has a very large real estate market. Developers can take strategies to mitigate the effect of the threat due to the increase of new entrants. If developers can offer a somewhat unique property product and there are special skills and assemblages required in their successful development: design, infrastructure planning, and community building. The developers can capture the submarkets with their differentiated property product. This special product can help developers gain a larger market share in the fierce competitive market. On the other hand, the development for real estate normally requests large amount of capital. This presents difficulty to the entry of new businesses. The large capital for property project by large developers makes it almost impossible for new domestic entrants, such as small developers. Real estate industry is a very capital intensive industry, especially when developing large scale property projects. Not only are the costs high, but the knowledge it takes to conduct property projects on a large scale is also difficult to acquire. Getting a parcel of land large enough for a development project requires a lot of capital and expertise. Only those with sufficient experience and strong capital resources are able to enter into the market and compete with the existing large developers. This demonstrates the threat from new entrants to existing real estate developers is limited.

3.5.3 Bargaining Power of property buyers

At present, the demand for commercial houses is larger than supply in China, which makes the real estate market on seller's side. Therefore, property buyers have less bargaining power when they negotiate with developers. On the other hand, buyers for

newly constructed property are fragmented and cannot form a united power to negotiate with developers in Chinese real estate market. Each home purchaser competes individually for the best price. Buyers rarely get together to negotiate a “good deal”. Furthermore, homebuyers usually do not know how to choose between new home suppliers as the information cost for buyers is high. The buyers can only have bargaining power over developers when they are concentrated, purchase a significant portion of new homes, and pose a credible threat to purchases from competitors.

In order to strengthen their bargaining power, developers often take the differentiation strategy or establish long-term relationship with homebuyers. Providing buyers with unique services can enable developers to have high bargaining power as there are fewer competitors. For example, building up reputation of green building will be a competitive advantage for developers.

3.5.4 Bargaining Power of Real estate developers

The real estate industry is supplier intensive. Land is required and owned by government in China. As land supply is scarce, developers have to spend a large amount of resources on land acquisitions. The developers have little bargaining power with government. On the other hand, the land supply is lack of price elasticity, which makes little flexibility for developers to decide on the sale price, thus transfer the higher costs to buyers who have no bargaining power with developers. The bargaining power of the supplier is limited in that land prices fall within defined ranges by government.

In the process of project development, real estate developers also require a large number of inputs except for land, including wood, concrete, plastic, gravel, oil, gasoline, steel and other raw materials. Prices for some of these materials are

non-negotiable, for instance, the price of gasoline and oil, which affect all developers equally and do not lead to a strategic advantage for suppliers. However, the fragmented nature of the supplier market in all other construction supplies to real estate developers severely limits supplier power. These also contribute to the lower bargaining power for developers.

3.5.5 Threat of Substitute of Property Products

One particular substitute in real estate market is the small property right houses, which may be brought by the policy reform on land use system. Reform on land use system and government policy can bring about much small property right houses into the commercial housing market. Up until now, the prospects of government policies for small property right houses are uncertain. Small property right houses in China refer to commercial houses built on rural collective land. They are usually built by the cooperation of developers and village committees or by village committees themselves. Due to the nature of the land, there is no house property right certificate issued by construction department for such a house. It cannot go to public either. The property right certificate for it is issued by the town government. The seller is the village committee (Yu and Tang, 2009). Compared with commercial residential buildings, one great advantage of small property right houses is the low price. Usually the price is 50-70% lower than that of houses with wholly owned property right. This makes it possible for low-income families to own a house. In this context, if the property right for those types of houses are allowed to transaction in the market by the government policy reform on land use system, this will inevitably bring about threat to the existing real estate developers. With the rising price of commercial residential buildings sold by real estate developers, Chinese small property right houses were springing up between 2006 and 2008 (Liu and Zhang, 2008). This presents that the

actual threat from substitutes is of limitation as the future of small property right houses is still uncertain.

3.6 Summary

Understanding the competitiveness for real estate developers needs to appreciate the environment and the profile of the real estate industry within which developers are competing , as such an enquiry is largely determined by the given market conditions. This leads to the endeavors of present chapter to investigate the characteristics of China's real estate industry. This chapter first introduced the historical development of real estate industry and then developed an analytic framework that comprises the issues from the disciplines of managing real estate industry for guiding the investigation. By doing this, insights can be gained into the unique market and its implications for understanding real estate developers' competitiveness in China.

The characteristics of China's real estate industry are determined by its fast transformation from a central planned economy to a socialist market economy, and towards an increasing integration into the world community. Since its adoption of the "open-door" policy and economic reform, the world has witnessed the impressive high speed growth of China's real estate industry. However, the transformation has led to particular profile of China, e.g. the fast economic growth, the rapid urbanization process, the favorable real estate policies, the supportive technology environment and effective ecological implementations, which have made the real estate industry possess a variety of distinguishing characteristics.

On the other hand, the internal environment also has a great impact on the development of real estate industry. The development of real estate industry can be altered by five competition forces, including threat of new entrants, bargaining power

of property buyers, bargaining power of real estate developers, threat of substitute of new property houses, and degree of rivalry among existing competitors. Understanding on the competition conditions can provide a sound basis for analyzing the competitiveness of individual real estate developers in the forthcoming chapters.

**CHAPTER 4 DEVELOPMENT OF
REAL ESTATE DEVELOPERS IN
CHINA**

CHAPTER 4 DEVELOPMENT OF REAL ESTATE DEVELOPERS IN CHINA

This chapter develops an analytic framework to guide the investigation on the industry development. Following the analytic framework, this chapter then explores the characteristics of the Chinese real estate industry from examining external environment and internal industry environment.

- *4.1 Introduction*
- *4.2 Characteristics and status quo of real estate developers*
- *4.3 Business activities in value chain for real estate industry*
- *4.4 Relations between developers and other stakeholders*
- *4.5 Development stages for real estate developers*
- *4.6 Summary*

CHAPTER 4 DEVELOPMENT OF REAL ESTATE

DEVELOPERS IN CHINA

4.1 Introduction

This chapter will present a comprehensive understanding on the development and characteristics of real estate developers in China. The investigation in this chapter will employ the research methods of interview and case studies which have been described in Chapter 1. In order to verify and support the research findings in this chapter, several interviews with general managers of real estate firms are carried out. In the interviews survey, 20 senior managers are selected from real estate enterprises to participate in interviews, including 10 vice general manager, 5 general managers, and 5 department managers. These enterprises are located in the Yangtze River Delta (including Shanghai, Hangzhou) and the Pearl Delta (Guangzhou and Shenzhen). The interview works were conducted in August and September in 2008. The semi-structured interviews were adopted through open-ended questions whilst each interview was controlled within one and a half hour. The major topics in the interview survey include the development stages of real estate developers, how can the value chain method (VCM) be applied in real estate industry, and the developers' relations with major stakeholders. The understanding on developers' characteristics will set up a solid foundation for examining developers' competitiveness in later stage of this study.

4.2 Characteristics and status quo of real estate developers

It is well appreciated that different types of enterprises have different characteristics and effective border in their business (Committee of Donor Agencies for Small

Enterprise Development, 1995). There are also many different types of real estate companies, which are categorized and described as follows (Kummerow and Lun, 2005):

- Development, design, construction and land use planning (Developers)-creating new real estate assets; Developers buy land, finance real estate deals, build or have builders build projects, create, imagine, control and orchestrate the whole process of development from the beginning to end.
- Agency (brokerage)-bringing together buyers and sellers (sales and leasing);
- Property management-marketing, managing physical plant, tenant relations and accounting;
- Valuation and research-estimating current market values of properties (for finance, purchase, sales and taxation) and acquiring and analyzing information on property markets;
- Funds management/investment-listed trusts, wholesale funds and syndication; They help their clients find income-producing properties like rental homes, apartment buildings and retail centers like shopping malls. They also sell these properties and utilize networking and personal and business relationships to generate quick sales for clients.
- Corporate and public sector real estate-facilities management to provide effective and efficient places to do business or provide public services.

However, as introduced in Chapter 1, real estate developers are defined as the research scope in this research. Real estate developers can be typically classified into the following types:

Residential developers

This type of real estate developers works by purchasing a bulk of land, design and find contractors to build the project, and then sell the property that is used for residential purposes. In the process of developing residential properties, developers, brokers, agents and realtors work together with home buyers and sellers in the development, sale and purchase of new and resold private homes. Residential developments are the major part of real estate transactions.

Commercial developers

This type of real estate developers works with businesses to identify, purchase, lease, manage or sell property that is used for commercial purposes. This type of developments can include offices, retail, restaurant and light industrial properties. Transactions for commercial real estate involve more stakeholders and the process of the transactions take much longer than that for residential deals.

Industrial real estate developers

Industrial real estate development is a distinct subset of commercial property that requires a set of knowledge, skills and relationships that is more specialized than with regular commercial properties. Industrial real estate developers have to not only find the right geographical location, but also needs to find a locale that offers the right labor pool, tax structure, regulatory environment and governmental relationship.

This research will focus on examining residential developers, which can be further divided into public, private, and state-owned enterprise in China. The characteristics of and status quo of the residential real estate developers can be demonstrated in the following sections.

4.2.1 The characteristics of Real estate developers (RDEs)

Real estate projects have strong local characters, thus each real estate project has unique features

Real estate products are different in locations, shapes and application of materials. These differences present difficulties in promoting standardization for real estate products (Weimer and Hoyt, 1948). Thus REDs need to spend special efforts in planning each individual project.

Real estate businesses engage complicated and long contractual process with various other businesses.

The production process in real estate business embraces various lengthy activities, typically including site acquisition, site survey and formation, securing planning consent, finance arrangements, design, construction, and marketing (Barrett et al., 1978; Healey, 1994). Each individual process needs to be undertaken by cooperating between real estate developers and various other enterprises and professionals, including suppliers, design firms, construction firms, property management companies and others (Jin, 2003).

REDs are capital-intensive

Sufficient funds are needed for the development of a real estate project is in large scale mainly for land acquisition and construction. Real estate developers have to approach various financing channels to secure sufficient finance for operating business activities (Wu, 2002). This is echoed by interviewees including the managers in Vanke and Greentown, suggesting that banking is the most important financial channel for their businesses. Meanwhile, land is the premise and primary condition in operating business for a real estate developer (Liu, 2004). In the absence of adequate

land reserves, a real estate developer will lose business opportunities, and its business may have to be suspended. The land reserve is guaranteed by sufficient capital resources. In particular, with the limited land left for urban development, land resource in urban area becomes scarce and expensive. Real estate firms with no land reserves in urban area will find themselves in disadvantages position. Therefore, proper strategies for reserving land resources are very important to REDs.

REDs' business is subject to high risk but at the same time with expectation of high return (Jasmine and Linda, 2007)

Real estate projects usually engage a long term of production process. This lengthy process presents various types of risks such as changes in governmental policies, changes in interest rates, changes in market environment (Krabben and Lambooy, 1993). In the interview survey, the manager from Greentown Developer pointed out three typical risks for REDs in China: (1) the fluctuation in economic environment and real estate market, which can bring REEs with loss; (2) the change of financial interest rates, which leads to the cost increase; and (3) the changes in the government's macro-regulation, which can cause risks to REDs. The resources invested in developing a real estate project are usually in large scale, thus the consequences will be substantial if risks.

4.2.2 The status of Real estate developers (RDEs) in China

There are several major characteristics for investigating the status of real estate development enterprises, including large quantities of firms with smaller size, diversified ownership structure, low level of qualification, and relatively higher asset and liabilities.

The total number of RDEs is large, but the size of the individual RED is small

With the rapid development of China's real estate industry, the number of real estate development enterprises has been growing over the previous two decades. In 1998, the total number of real estate development enterprises is 24,378, whilst in 2006 the number has reached to 58,710, which is 2.41 times as that in 1998. From Table 4.1, it can be seen that during the period 2000-2006, the annual investment in real estate development is 1.94229 trillion Yuan and the completion of housing area is 558 million m². Table 4.1 shows the major indicators of the development of real estate developers in China from 2000 to 2006. The industry grew quickly during the period in terms of number of real estate enterprises, average asset, average revenue, average floor space under construction, ratio of liabilities to assets.

Table 4.1 The development of real estate developers in China (million yuan, sq.m)

Year	2000	2001	2002	2003	2004	2005	2006
Total number	27303	29552	32618	37123	59242	56290	58710
Average asset	922.46	966.67	10130.34	10906.04	10429.96	12825.30	15056.72
Average Revenue	1441.39	1645.49	1849.39	2143.06	2247.47	2623.80	3073.88
Average floor space under construction	24135.4	26871.85	28850.33	31658.54	23708.08	29499.61	33177.72
Ratio of Liabilities to Assets	75.6	75.0	74.9	75.8	74.1	72.7	74.1

Source: NBS: China Statistic Yearbook (2001-2007)

Diversified ownership structure

Although China's real estate industry has a relatively short history, the ownership structure of the REDs are diversified. The REDs are grouped into domestic funded (State-owned, Collective-owned and Cooperative Enterprises as well as Private-funded enterprises) companies, funded from Hong Kong, Macao and Taiwan, and finally foreign funded companies (See Table 4.2). Among them, the number of cooperative as well as private-funded enterprises increased by 35091 from 1999 to

2005, while at the same time, the number of the state-owned and collective-owned reduced by 5556. The number of Cooperative and Private-funded enterprises is still increasing until now. After China's accession to the WTO, more and more Hong Kong, Macau and Taiwan funded and foreign funded developers have entered into Chinese real estate market. For example, the number of foreign funded enterprises has increased by 61% from 1999 to 2005.

Table 4.2 The total number of diversified ownership structure real estate development enterprises

Numer	1999	2000	2001	2002	2003	2005	1999
Total	25762	27303	29552	32618	37123	56290	25762
Domestic	21422	23277	25509	28657	33107	50957	21422
State-owned	7370	6641	5862	5015	4558	4145	7370
Collective-owned	4127	3492	2991	2488	2205	1796	4127
Private & cooperated	9925	13144	16656	21154	26344	45016	9925
Hong Kong, Macau and Taiwan	3167	2899	2959	2884	2840	3443	3167
Foreign	1173	1127	1084	1077	1176	1890	1173

Source: Edited from the China Real Estate Statistic Yearbook (2000, 2001, 2002, 2003, 2004, 2006, 2007)

Considering Table 4.3, Shanghai is a typical market where foreign developers are increasing. It can be seen that developers from Hong Kong, Macau and Taiwan are playing increasingly significant role in Shanghai's property development market. Shanghai real estate market encourages the cooperation and participation by overseas developers. For example, the construction of Jinmao building, the tallest building in Shanghai until 2005, involved various types of overseas developers, which phenomenally illustrated the openness of Shanghai's city development to the world (see Table 4.4).

Table 4.3 Foreign developers in Shanghai

Year	Total No. of developers	Total No. of Foreign developers	Total No. of Foreign developers from HK, Macau and Taiwan	Foreign developers as % of total No. of developers	HK, Macau and Taiwan Developers as % of total No. of foreign developers
1996	2030	256	93	12.6	36.3
1997	2398	264	129	11.0	48.9
1998	2601	307	206	11.8	67.1
1999	2595	301	208	11.6	69.1
2000	2549	285	201	11.2	70.5

Source: State Bureau of Statistics (SBS) (2002).

Table 4.4 International participants in the construction of Jinmao Building

Participants	Company
Architecture design	SOM (USA)
Construction	Japan, France, Hong Kong and Shanghai
Quantitative surveying	Hong Kong
Steel structure	Japan
Facade engineering	Germany
Life system	Japan
Air conditioning system	ROM (Germany)
Electrical system	Cegelec (France)
Intelligence system	Singapore
Interior design	BLD(USA)
Hotel management	Hyatt (USA)
Real estate management	Joint-venture multinational firm

Source: Zhu and Sim (2005)

Low level of qualification among RDEs

However, the overall qualification level of real estate developers in the Chinese real estate market is low. Real estate developers in China are classified into four grades, with highest level of grade 1. According to the China Real Estate Statistic Yearbook (2006), in the year 2005, the proportion of REDs ranked as first-grade and second-grade is 8.05%, while the proportion of third-grade and fourth-grade is 53.44%. The number of REDs that is below fourth-grade takes up as high as 38.51%. The number of REDs ranked as third-grade as well as fourth-grade takes more than half of the total number in the year 2002 and 2005, which illustrates that the overall qualification level is low in China. According to the China Real Estate Statistic Yearbook (2003), 27.58% of the total real estate investment is completed by the REDs

ranked below fourth-grade. The developers with low qualification are relatively weak in the finance capabilities, risk response capability and management capability, which affect the quality operation of the market. It is obvious that there is a need to improve the quality and qualification of these lower grade real estate developers. Such improvement can contribute to the healthy development of the real estate market as a whole.

Table 4.5 The structure of qualification grade for China's real estate development enterprises (2002, 2005)

Qualification grade		First-grade	Second-grade	Third-grade	Fourth-grade	Tentative	Others
The proportion	2002	1.21	8.66	38.85	25.95	15.13	10.2
	2005	0.93	7.12	32.32	21.12	30.44	8.07

Source: Edited from the China Real Estate Statistic Yearbook (2002, 2005)

Relatively higher asset and liabilities

As can be seen from Table 4.6, the business assets and liabilities rate of Chinese real estate developers is above 70% from 2000 to 2006, which is higher than that of industrial enterprises at the same period. According to the central bank monetary policy implementation report at the third quarter of 2003, more than 60 percent of the China's real estate market funds came from credit funds. As stated before, the real estate industry is characterized as a capital-intensive industry, which needs huge capital investment during the processes of acquiring land-use right, construction, marketing, after-sales service and so on. While the small and medium sized developers with limited funds have to rely on debt to achieve development and management, which make it difficult to acquire land at lower cost and gain scale economies. If the assets and liabilities' rate is high, combined with limited financing channels, the small and medium-sized developers cannot sustain in the fierce competition market environment.

Table 4.6 Assets and Liabilities of Enterprises for Real Estate Developers (Unit: 10,000 million yuan)

Year	Total asset	Total Liabilities	Assets reliability ratio
2000	2,518.60	1,903.21	75.6
2001	2,856.68	2,143.57	75.0
2002	3,304.31	2,476.46	74.9
2003	4,048.65	3,069.86	75.8
2004	6,178.92	4,578.36	74.1
2005	7,219.36	5,252.07	72.7
2006	8,839.80	6,547.67	74.1

Source: China statistic yearbook (2007).

The above discussion has addressed the characteristics and development status of real estate developers. It can be seen that the small-medium sized developers and those with higher asset-liability rate will face more and more challenges in the Post-WTO real estate market environment. These findings provide a good background for the further study into the development stages, business value chain activities of real estate developers in China.

According to Figure 3.1 in Chapter 3, the external and internal environment for real estate industry has been discussed. The following sections will address the characteristics of business value chain and stakeholders relations. Finally, the development stages for real estate developers are investigated by conducting case studies.

4.3 Business value chain activities for real estate developers

Previous studies suggest that business competitiveness comes from the chain of business activities (Zhang *et al.*, 2010). Porter (1985) defined an organization's production process as a Value Chain Model (VCM). This value chain includes five primary processed activities: inbound logistics, operation, outbound logistics, marketing and services, and four support activities including firm infrastructure, human resource management, technology development and procurement.

The interviews with the professionals working in the four case studies described in previous section will further assist in studying the real estate value chain activities. Real estate companies are complex businesses, affected by many factors of which many of them are uncertain variables. The value chain activities for real estate developers can be described by a value chain model, as shown in Figure 4.1.

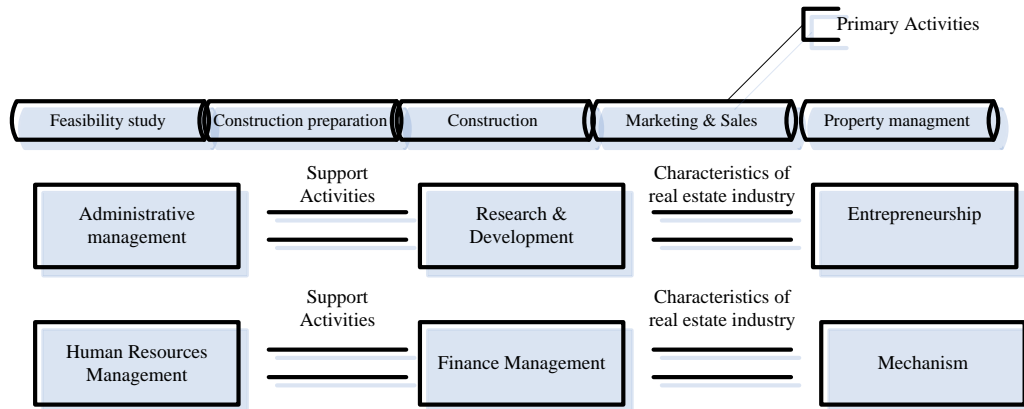


Figure 4.1 The value chain model (VCM) for Real estate developers

The primary activities of value chain model for real estate industry in China can be divided into five major stages: feasibility study stage, construction preparation stage, construction stage, marketing and sales stage, property management stage. The supportive activities include administrative management, human resource management, technology (R&D), finance management. The survey interviews suggest that entrepreneurship and mechanism are two major parameters affecting the business activities on the value chain model in Chinese real estate industry.

Schumpeter (1911) defined entrepreneurship as “the assumption of risk and responsibility in designing and implementing a business strategy or starting a business”. The capability of the entrepreneur is particularly important for new businesses as many problems and uncertainties exist at this time are in a rapidly

changing environment in Chinese real estate market. For example, entrepreneurs in real estate firms need to have the competence to make proper judgments when they consider buying land. This is echoed in the case of Wang Shi, the chairman of board of China Vanke, who mentioned that “if there is an error in the judgment of land purchase, there will be a great loss that is not amendable”. On the other hand, operation mechanism within business is another important factor in the business value activities of real estate developer. When the real estate firms start their business in the market, they have to keep adjust themselves to co-ordinate with external environment by using appropriate management mechanisms.

The ‘primary activities’ for real estate developers on the value chain can be examined in details as follows:

Feasibility study

At this stage, a detailed assessment on the project environment will be carried out in order to ensure that the development is worth pursuing. Feasibility study presents the viability of the project and provides essential information for developers to understand the potential return of the development and make due decisions. Project feasibility study concerns multiple aspects, including the political, economical, environmental, location, technological and financial elements. There are three major processes to conduct project feasibility study. The first step is searching the investment opportunities in which the investor collects information about the proposed development projects, across wide range of aspects including economics, politics, population, geography, market and public demands, etc.

Having obtained preliminary information for the project feasibility study, the next step is to examine the project concerned and collect project information. This includes

general property market information on the demand and supply, the supply of construction materials, the detailed plan of the project, the target market and the transaction price, the construction cost and others. A preliminary financial analysis should also be conducted.

Based on the above, the next step is to process detailed feasibility studies on the concerned project. In this step, detailed technical assessments of the potential projects are to be carried out, concerning the development type (high-end or low-end), the usage (residential, office, commercial, mix or others), the scale, total investment cost, construction period, operation about this projects, disposal in the future and detailed cash flow analysis. Based on the findings and assessments, the best option for the development is identified and the feasibility study report is prepared. The complete feasibility report includes the items of detail information about the potential project, analysis on the environment, analysis on the property market, project planning and construction condition, master plan of project development and construction timeframe, investment budget and project financing, project risk analysis and financing analysis including the detailed project cash flow, return and operation cost for the projects.

Construction preparation stage

Construction preparation concerns acquisition of the land-use-rights (LUR), project design, and obtaining planning permission for construction. If a developer decides to process forward developing a real estate project, he needs to obtain the LUR, which can be granted by the government authorities or transferred from other land users. After obtaining the LUR, the developer can organize a site investigation on the project location. Through the investigation, the developer can further understand the project

geological constraints, and the survey information will be used for preparing project design. Design must be in line with the government master plan and the conditions specified in the contract for the grant of LUR. Government master plan controls major design parameters, typically including the site area, plot ratio, the site coverage ratio, the maximum height of building, the ratio of green areas, total gross floor area, the number of the car parking spaces, and the depth of underground construction. The values of these parameters can affect the return of the project investment to a large extent. Project design will then be submitted to the Land Administration Department for obtaining Construction Land Use Planning Permission, and to the Planning Department for obtaining Construction Project Planning Permission. These permissions have to be presented to other official departments for obtaining other permissions in order to commence the construction which include the Construction Committee, Fire Department and Transport Department.

Construction stage

The construction stage translates project design to physical product, and project management team is responsible for the achievement of this translation. Project supervision system has been adopted for improving the performance of project management. By adopting this system, a professional firm called project supervision agency is responsible for supervising the implementation of project construction on behalf of the project client. Upon completion of the construction, the evaluation for project completion will be conducted by the relevant Government authorities. The government department will issue a project completion certificate if the completion is satisfactory.

There are three major procedures during construction stage. Firstly, tendering process will be taken to select a suitable contractor for building the project. There are three forms of tendering methods for construction contracts, i.e. open tendering, selective tendering and negotiate tendering. In practice, the first and second methods are mostly adopted in China. After obtaining the Commencement of Construction Project Permit, the construction process can commence. Pursuant to the contract, the contractor is responsible for the construction process of the project.

The second step in construction stage is to engage the actual construction works on site. Project manager and project supervision engineer will play the key role. Project manager would be responsible for harmonizing the project stakeholders engaged in the program. During the construction process, site management and supervision are very important. A proper project supervision consultant must be employed for supervising project performance on behalf of project developer. Project supervision system has been developed in Mainland China. By governmental regulation, project supervision firm as a professional firm is responsible for supervising the quality, the cost and timing, the contract and information management and cooperation in the whole construction process. Supervision consultant will also assist in controlling other key aspects such as noise control, environment protection, communication and transportation, material and equipment supply, electronic and water supply, the approval for the change of the layout plan, etc.

Upon the completion of the construction works, the evaluation for construction quality of the project will be conducted by the relevant government authorities, working together with designers, contractors and developers, and a certificate on the acceptance of the completed construction quality will be issued by the government

authorities. By this stage, the real estate product will be handed over to the developer, and the property ownership will be registered in the government.

Marketing and sales stage

At this stage, the developers will generate revenues by selling or leasing the properties. The activities of selling and leasing can be undertaken before or upon the completion of the construction of the project. There are a number of procedures involved in this stage. Firstly, pre-sale or sale permission should be obtained from the relevant government authorities. Developers have to examine the market carefully when establishing a selling price or a rent for the property. Since property is a basic element to human life, the government authorities often influence the selling price in the property market, so the selling or disposal of the property is not only affected by the market conditions but also by the government policy. For setting the real estate sales price, developers will normally appoint a sales agency to give professional advice and information. The agent will assist the developer to promote and sell the property in the market. A temporary sales office and a sample/show unit are usually set up for promoting the sales. Advertisements of the sales are also placed in the media.

Property management stage

When the contract of the property title transfer between the developer and purchaser is endorsed and registered by the relevant government authorities, a property ownership certificate will be issued to the purchaser by the government authorities and the title of the property is transferred from the developer to purchaser. The property development process is finished at this point of time. From this point, the property management company will be responsible for undertaking the maintenance and management of the property.

A property management office will be formed to prepare for the post-selling services. Property management is one of the major factors affecting the performance of property sales. Customers will not only consider the quality of products but also the post-selling services of products in China. The property management is the extension and an important branch of the real estate industry. It is a service industry which involves different trades and fields such as real estate, municipal administration, forestation, industrial and commercial administration, urban planning, postal and telecommunications. The property management service is a relatively new industry in China and thus the service quality is subject to improvement. Complains from property users are common about the quality of project management service. According to the data announced by the Chinese Consumers' Association, the complaints of the commodity house about the poor management performance rose by 5% in 2002 compared with that of 2000 (Chen *et al.*, 2006). One of the major complaints from the residents on property management is the high charge on the management fee. In fact, collecting service fee is the main problem which often leads to the conflict between property management firms and home owners. The main reason for this is the argument on the level of property management fee. Nevertheless, this issue is arguable. One explanation is that the fee level is not necessarily beyond the customers' affordability; rather it is the quality and attitude of the service that customers are not satisfied, considering what they receive does not deserve for what they pay. This indicates that there is large room to improve the management quality within these property management firms.

The above analysis on the business activities of value chain model for real estate developers has demonstrated that the following areas can affect real estate developers' competitiveness:

- Transfer mechanism,
- Marketing schedule control capability,
- Value chain integration capability,
- Capability to get permit of developing real estate projects approved by government,
- Quality control and planning capability,
- Corporate business process management capability,
- Inter-departmental coordination capacity,
- Production cost planning and control capabilities

4.4 Relations between developers and other stakeholders

As demonstrated in the previous section, there are many business activities occurred during the process of real estate development. Developers have to work with many other parties in order to process these activities, including city planners, governments, architects, advertisers, marketing and planning agents, appraisal agents, contractors, supervision engineers, materials suppliers, property management agents and others. All these working relations will affect the developers' competitiveness to a large extent. Figure 4.2 maps the value activities and related stakeholders in the process of developing a real estate project. Establishing good relationships with these parties enable developers to have more opportunities to obtain real estate projects and profits and improve their business performance. The good relationships present competitive advantage for real estate developers. The following section will address these relationships in detail.

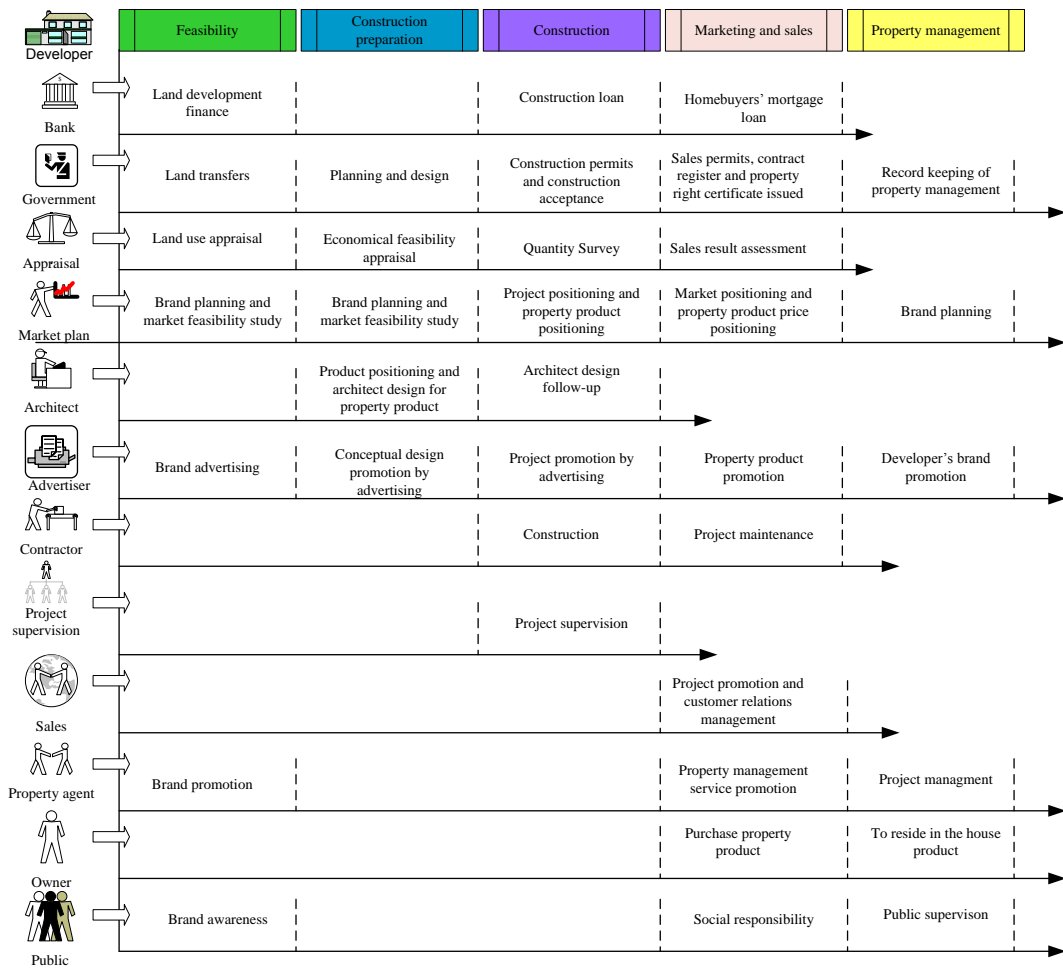


Figure 4.2 A framework for analyzing development procedures and stakeholders for real estate developers

4.4.1 Relationship with Planners

Planning affects largely the feasibility of real estate developments by the way it allocates land and development rights to the real estate developers. Planning also affects the provision of infrastructure for real estate development including its location, timing, type, quality and the incidence of the costs.

It is important for real estate developers to know the planning information through effective communication with planners. At project level, developers need to submit project planning proposal to planning authorities, and it is important to have the advice from planners. In this context, developers have to work closely with planners,

thus establishing good relations with planners are important. Lobbying may occur for pro-development interests generally or for specific interests where developers compete with each other for the favorable allocation of resources (Molotch and Vicari, 1988). Developers do not have to participate formally to influence planning as they are in frequent negotiations with planners about their projects (McGuirk, 1995). The importance of establishing good relations between developers and planners are also echoed in other studies. For example, Coiacetto (2006) opined that it is necessary and significant for real estate developers to establish and maintain the relationship with planners in a city or community as developers can use the good relations to suppress competition by challenging other rivals' proposals.

4.4.2 Relationship with Banks

The role of bank is very important to real estate development. It is estimated that about 60% of the investment in real estate development comes from the commercial banks in recent years in China (Liu and Huang, 2004). There are three types of financial relations between developers and banks during the process of real estate development, including land development loan, construction loans and housing mortgage loan.

Land development loans are usually a secured form of borrowing for the purpose of preparing land for future construction. Real estate developers rely heavily on bank debt and pre-sales in order to proceed to construction. In order to get sufficient loan from the bank, real estate developers have to maintain good relations with banks. The bank will usually require developers (borrowers) to submit a feasibility plan that describes procedures of the concerned development. The feasibility of development

plan should include all projected costs of the development, including costs for obtaining building and zoning permits and other associated costs.

A bank may finance any one or all of the phases of a real estate project. Residential construction loans are made on either a speculative basis, where houses are built to be sold later in the real estate market or on a pre-sold basis for a specific buyer. Construction loan provides a developer with funds to build property projects. In order to persuade the banks to lend funds, developers have to show a mechanism for properly controlling the development process and regulating the funds operation, and demonstrate good possibility of generating significant profits which can ensure to pay back to the bank over a relatively short period of time. Banks on the other hand will review the developers' financial condition, experience, and reputation to assess the likelihood that the proposed property projects will be completed successfully.

Furthermore, housing mortgage loan will enable homebuyers have access to the house purchase market. The banks become more careful when issuing the mortgage loans particularly after the crisis of second housing mortgage, which happened recently in the United States. A bank's primary concern when issuing mortgage loans is the reasonable probability that the borrower will have sufficient cash flow to meet the repayment terms.

Whilst it is important for developers to maintain good relations with bank, the developers need to analyze their own conditions, and at the same time, try to find other financial channels to get funds, for example, real estate trust and store market.

4.4.3 Relationship with government

Developers have to work with various governmental officials during the whole process of developing a real estate project. Thus it is essential to establish cooperative

relationships with relevant government departments because these departments enact relevant regulations and documents in the process of the development process.

Land resources in China are managed by the Ministry of Land and Resources, which is authorized by the State Council. The Ministry generally has four levels, namely provincial level, municipal level, county level and town level. When land use right is transferred, the State-owned Land Use Rights Granted Contract is entered into between a land purchaser (developer) and the authorized land resources bureau. The land purchaser needs to apply for the State-owned Land Use Rights Certificate after the land use rights fees have been fully settled. Other major documents to be endorsed by governmental offices include the Approval of Construction Project Site Selection, Construction Land Use Planning Permission and Construction Works Planning Permission. All of these documents have to be signed by relevant government in China.

In the construction preparation stage, there are other approvals and permissions required to be obtained from related Government authorities, typically including:

- Approval for the Earthquake-proof from the Construction Bureau;
- Approval for Construction Design from the Construction Bureau;
- Approval for the General Plan and Detailed Plan of the Project from the Urban Planning Bureau;
- Opinion for the Public Ancillary Facilities Construction from Fire Fight Department, Healthy Department, Water Department, Gas Company, Electronic Company, etc.

Therefore, establishing good relationships with these departments will enable developers to have the effective information about policies and avoid the chance of

committing illegal real estate activities. The good knowledge about policies will direct developers to right procedures when planning for real estate development, thus improve the winning probability in competing for the property projects.

4.4.4 Relationship with Professional consultants

The consultant involved in the process of developing real estate projects include architects, real estate appraisal agency, planning and advertising agents, sales agents and property management agents.

Real estate appraisal is to judge the market value of land and property, which is generally performed by a licensed or certified appraiser. Appraisers deal with the estimation of market value by gathering related data, integrating them on the basis of land, and carrying out the analysis using proper methods and experiences. The real estate appraisal plays an important role in the process of real estate development. The appraisal agent offers the real estate developers with comprehensive information on more reliable market value of the designated land or property; this would be critical for developers to make decisions where appropriate. In the process of real estate development projects, the architectural firms will help developers in preparing feasibility reports, conducting design of a building or of several buildings, and assisting in supervising construction process. The major role for architect is to translate the developer's concept into a workable solution. The architect participates in developing the requirements the client wants in the building. Throughout the project (planning to occupancy) development process, the architect will co-ordinate with the design team including structural, mechanical, and electrical engineers and other specialists.

Promoting and advertising agents, together with sales agents are responsible for selling the completed property successfully. The advertising agents are responsible for setting the price, packaging, and advertising the completed property projects according to the developers' requirements. They will assist sellers in marketing their property and selling it for the highest possible price under the best terms. Advertisements in the media are also placed to promote the brand of the property project to facilitate the process of the sales.

Furthermore, as it is discussed previously, property management agents will be formed to prepare for the post-selling services. Customers will not only consider the quality of housing products but also the post-selling services of property. Property management agents are employed to take physical care of a real estate asset. For example, they have to make sure that the windows were washed, all the mechanical systems were working properly, and the landscaping was in good condition. The good property management services can help maximum client satisfaction, a good reputation, and the most economical operation.

4.4.5 Relationship with Contractors

Developers employ suitable contractors to complete the construction of their development projects. It is essential for developers to work closely with contractors throughout the whole construction process in order to have good project performance. Developers have to be very careful in selecting contractors thus risks can be mitigated, such as claims, disputes. For understanding contractors, developers may collect information pertaining to contractors from their previous clients, designers, subcontractors, sureties, and their compliance with regulations. It is essential that the contractor has good experience and the required building technology. Contractor is

the key player in the construction process, who will affect directly the project performance. The good relation with the contractor therefore is the key for developers to receive on time a qualified real estate product.

4.4.6 Relationship with real estate owners (buyers)

Owners appear when the properties are to be sold. They choose the suitable products and make decision to buy products offered by different real estate developers. It is therefore necessary for developers to find ways to attract buyers. Real estate developers in China have been seeing the discrepancy between quantity demanded and quantity supplied in the market. Developers have been enjoying good market performance as there has been a continuing demand for real estate products in the market. However, this may change in the future when customers have more choices. Therefore, establishing good relation with customers by offering good quality and reasonable price is important to developers.

The importance of having good relations with customers can be further evidenced by the case study of Vanke. Vanke has been continually seeking for the high quality of property product. The quality and performance provided to customers by Vanke excel the market average. Vanke will continue to strictly adhere to its “quality first” philosophy, as well as enhance communication with its customers, while improving customers’ recognition of product quality. On the front of product performance, the Company will emphasize convenience, comfort, energy saving and environmental friendly aspects of the products when being used. In line with these strategies, the relationship between Vanke and the end users is sustained. The loyalty of these customers will be kept longer, which will bring special competitiveness for Vanke in the real estate market.

4.4.7 Relationship with the Public

Good relationship with the public will promote a developer's image and reputation, which can enhance the developer's intangible value and improve overall competitiveness accordingly. Developers should show social responsibilities by offering good quality and environmentally friendly products. They shall allow their business activities more transparent to the public, allow the public opinions responded properly, thus gain respect and trust from the society.

In this aspect, Vanke, acting as the leader in the Chinese real estate development industry, has shown a good example. According to the interview with one manager in Vanke, *“A leader does not only lead in performance and capability, but also undertakes greater social responsibilities and has the mission to lead the industry to healthy development. On one hand, Vanke has to pay attention to the influence of our self reform on the industry transformation. On the other hand, Vanke has to be aware of the fact that the advance of the industry and the harmony between the industry and society is interrelated to the environment and opportunities for the Company's future development.”*

In line with its mission, Vanke has been promoting the responsibilities of corporate citizenship within the Chinese real estate industry, and it has gained the trust and respect from society, which in turn give the firm greater opportunities for further development.

Based on the above analysis on the relations with stakeholders for real estate developers, it can be summarized that the following aspects that have important influence to real estate developers' competitiveness in the Chinese real estate market:

- Transfer mechanism,

- Availability of consumer resources,
- Availability of rich human resources,
- Availability of information channels,
- Relationship resources with government,
- Availability of media resources,
- Knowledge of market information channels,
- Expertise talents resources in real estate industry,
- Availability of long-term strategic partner resources,
- Availability of technology resources,
- Availability of strategic alliances resources,
- Horizontal cooperative mechanisms with related partners,
- Information technological capability,
- Customer relationship management capability,
- Development of green strategy to gain social responsibility.

4.5 Development stages for real estate developers

All businesses pass through distinctive stages, each with its own characteristics, as they develop (Scott and Bruce 1987). As Lippitt and Schmidt (1967) observe, ‘a business organization goes through the stages of birth, youth and maturity, it faces a predictable series of organizational crises...like people and plants, organizations have life cycles’. Quinn and Cameron (1983) view this in terms of four major stages: entrepreneurial; collectivity; formalization and control; and structure elaboration and adaption, while Steinmetz (1969) and Scott and Bruce (1987) identify three critical stages and five distinctive stages respectively.

As an organization progresses through its development stage, not all organizations survive inception stage to become large organizations. In a fiercely competitive environment, only a small percentage of newly formed organizations survive and only a very few of the survivors grow and thrive. In particular, many real estate firms fail to survive in their initial stage without proper competitive strategies. For example, in the year 1992, the number of real estate development enterprises in China mainland started a momentum with rapid growth by 8400 firms within the year. The number of real estate developers remained a gradual expansion from 1993 to 1995. However, the total number in the year 1996 is 213,000, reduced by 122,000 compared with the year 1995 (China Real Estate Statistical Yearbook, 2000). This means almost half of the real estate companies have died or withdrawn from the market in their inception stage. Then how many development stages do the real estate developers experience in China? The different development stages for real estate developers need to be identified to present the typical growth path from a dynamic perspective.

To understand the development stages of developers, several cases are used. These cases were carefully chosen so that they can be representative. According to Oviatt and McDougall (1997), enterprises at the initial 6 years are at the taking shape stage among all the stages. Therefore, the selection criterion for case study is that the age of real estate developers is above 6 years old. In addition, as the aim of case study is to summarize the theory while not to calculate the frequency, thus the sample selection of case study does not require following the sampling principles but possessing enough particularity and representativeness (Eisenhardt, 1989). Another criterion is the real estate developers should have rich experiences and delegate capability to do business in Chinese real estate market. Thus, all of the cases selected have been ranked for at least four consecutive years as one of the TOP 10 property enterprises in

China jointly by four authoritative institutions, including Enterprise Research Institute of the Development Research Center of the State Council, China Real Estate Association, Qinghua University Real Estate Research Center and China Index Institute. Eisenhardt (1989) also mentioned that, multi-case study is preferable to extract theory if conditions permit since a single case study is just like to tell a story, while multi-cases study may shape a better theoretical construct.

4.5.1 Backgrounds of the selected real estate developers for case studies

The cases are chosen are large real estate developers; including Vanke real estate group (A) (with the headquarter located in Shenzhen), Gemdale development enterprises (B) (with the headquarter located in Shenzhen), Henda Real estate Group (C) (with the headquarter located in Guangzhou), and Greentown China Limited (D) (with the headquarter located in Hangzhou). Their background information is summarized in Table 4.7.

Table 4.7 Description of Case Study

Cases	Number of employees	Ownership	Date of establishment	ROE (%)	Stock code
A	16,464	Private share holding enterprises	1984	16.55	SZ:000002
B	4442	Private share holding enterprises	1983	15.51	SHA: 600383
C	8,559	private share holding company	1996	11.25	SZ: 3333
D	2,637	private share holding company	1995	14.80	HK: 3900

sources: the annual report of listed real estate enterprises, most of data came from 2007

The interviews for each case study lasted two hours, involving a full discussion between the researcher and the project managers working on the case study projects. The key questions raised in the interviews concerned the development stages of the concerned developer, the business value chain activities engaged by the concerned

developer, and stakeholder relations in the housing development process. In the following discussions, the results for depicting the development stages for real estate developers will be investigated by using these case studies.

Case 1: China Vanke

China Vanke Company Limited (SZSE: 000002) is the largest residential real estate developer in the People's Republic of China. It is engaged in developing, managing and selling of the properties across 20 cities in Pearl River Delta, Yangtze River Delta and Bohai-Rim Region, with the provision of investment trading, consultancy services and e-business. China Vanke has been operating in the industry for 26 years, and has witnessed the development of PRC's real estate market from its inception stage to rapid growth stage, overcoming various drawbacks. The Company's competitiveness, which enables it to maintain its growth momentum and profitability will be the foundation for the Company's continued growth.

Stage 1: Start-up stage (1984-1992)

CHINA VANKE CO., LTD was established in May 1984. Vanke wanted to set up standard IT service process, increase IT service quality, and focus on IT as core business. Then the business unified and standardized IT services, covering over 30 cities and provided IT infrastructure operation services and achieved integrated and unified management nationwide. Nevertheless, in November 1988, Vanke won the bid in a land auction, it is the first time that Vanke entered into real estate field. In early 1989, Vanke Company made an important step in its development history: it collected a large amount of investment capital by issuing successfully stocks to the public. This enabled the company to expand and invest in land acquisitions and real estate projects. Issuing stocks was crucial step in Vanke's history. Based on this important

development progress, in January 29, 1991, Vanke was officially listed on the Shenzhen Stock Exchange, with the market value of 1 trillion RMB.

In its early stage, Vanke was as opportunistic and diversified as many other Chinese companies. The scale of real estate projects developed by Vanke is relatively small and occupies a smaller market share in the market. Nevertheless, the real estate business is unstable, thus the profit made by the company is limited.

Stage 2: Growth stage (1993-now)

In this stage, Vanke set up an example of being “focusing” and specialization in real estate business in China, whilst other entrepreneurs tend to favor diversification of business. With the core business of real estate, Vanke has been making remarkable progress.

Since the year 1993, the business gradually sold off non-core businesses and focused on residential property development in urban economic circle, especially in the Yangtze River Delta, the Pearl River Delta, and the Bohai Sea Region. This is further addressed by Yu, the CEO of Vanke, pointing out that the three major metropolitan areas have great potential for real estate business. The three areas account for the country’s total land area and 4.1%, 25% of total population, and 40% of total national GDP. Since then, Vanke have concentrated its resources in these areas to achieve an intensive expansion and become the leader in the Chinese real estate market particularly in the three above geographical areas in China.

From 2003, Vanke started to follow industrialization housing road, and developed residential project based customer demands. This strategy aims at identifying and

classifying the different demands of customers and developing products that suit the specific needs of customers.

From 2006 until now, Vanke entered a stage of rapid growth (Vanke's annual report, 2009). This is due to several reasons. First, China Vanke had made a significant improvement in managing its large-scale business after adapting itself to changes between 2001 and 2005. Secondly, China Vanke has a large number of loyal customers, which the Company regards as one of the most important assets it acquired over the years since it has been in the residential property sector, and there has been increasing demand from home buyers for better products and services in recent years. Thirdly, although industrialization in the China's housing sector has just begun, China Vanke has implemented design standardization. Fourthly, despite the fact that direct financing is yet available in the property market in China, China Vanke's credibility in the capital market will be an advantage to the Company when compared with its counterparts in the same sector or even in other industries. Since then, the strategic transformation has helped it to become one of the largest real estate developers in China. Up until 2010, Vanke has formed the residential product system based on customer segments, and established the Housing Industrial system (HIS) which has been applied into practice.

Case 2: Gemdale Development Enterprise (B)

Gemdale Corporation is a company engaged in property development. The Company's major products are commodity housings. The major property projects developed by the company include Gemdale Mellon Town (Shenzhen), Gemdale Green World (Tianjin), Gemdale Gzlakes (Guangzhou), Gemdale Green Spring Dawn (Shanghai) and Gemdale Green Spring Bank (Shanghai). During the year ended

December 31, 2009, the Company distributed approximately 1.9669 million m² of commodity housings. The Company operates its businesses primarily in Guangdong province, Wuhan of Hubei province, Beijing, Xi'an of Shaanxi province and Shenyang of Liaoning province. After 17 years of engaging property development business, the Enterprise has grown into a listed company with real estate development as primary business. Gemdale is an AAA credit company in the construction sector of China and a state-level rated real estate developer.

Stage 1: Start-up stage (1988-2000)

According to the interview discussions, the following information about the business was obtained. Gemdale was founded in 1988 and entered real estate business from 1993. In 1994, the first residential development of the Gemdale Corporation, named “Gemdale Garden”, was promoted to the market. In 1996, the “Gemdale Seaview Garden” was sold to the market. In 1997, both the “Gemdale Garden” and “Gemdale Seaview Garden” were selected as the “Model Residential Development for the National Properties Management”; and in the same year, the “Gemdale Industrial Zone” was chosen as the “Outstanding Industrial Zone in National Urban Properties Management”. In 1998, the development practice by Gemdale was quoted as “Gemdale Pattern” by the experts, which was announced on the symposium of “Modern Enterprise System and Gemdale Pattern” sponsored by the People’s Daily. Since then the company has become a successful development model representing for the State-Owned Enterprises.

Stage 2: Growth stage (2001-now)

In 2001, the Gemdale Corporation was among the first group of real estate companies listed in Shanghai Stock Exchange, issuing 90,000,000 “A” shares. In 2001, Gemdale

Property Management Co., Ltd was rated by the Ministry of Construction as Grade 1 State Property Management Enterprise. In 2002, Gemdale started to implement its cross-regional development strategy with business expansion to Shanghai, Shenzhen and Beijing as its local business centers for East China, South China and North China. By December 2005, Gemdale owns a number of holding subsidiaries, with the total asset value of 6,607 million RMB, 2,744 million RMB net assets. Of these assets, real estate development is the major part of the organizational assets. Gemdale has been improving continuously its business reputation and received various awards such as “The fastest growing brand real estate developer in China”, “The China Top Ten Real Estate Brand”, and “Top Three Real Estate Listed Companies”.

Case 3: Hengda Real Estate Group

Hengda Real Estate Group Limited (Hong Kong Exchanges and Clearing Limited with the stock code: 3333) is a large-scale real estate enterprise engaging planning, design, development, and construction of real estate projects. It is one of the leading real estate developers for high-quality products, and it has been ranked among the top 10 real estate enterprises of China for six consecutive years. The Group is a Grade-I real estate development company in China, a Grade A architectural design and planning research institute, a Grade-I architectural firm, a Grade-I construction supervision company, and a Grade-I property management company. According to its report in 2009, the enterprise owns 45.8 million m² of development land and real estate projects in 22 cities such as Guangzhou, Tianjin, Shenyang, Wuhan, Kunming, Chengdu, Chongqing, Nanjing, Zhengzhou, Changsha, Nanning, Xian, Taiyuan, Guiyang, etc) in China.

Stage 1: Start-up state (1996-1999)

Hengda began operations in Guangzhou in 1996. At the beginning of the establishment of the company, it was the time when Asian financial storm occurred. Hengda Real Estate Group seized the opportunity and brought a large amount of land for real estate developments. The business adopted the strategy of “shortening project development time, reducing selling price, fast construction and sales”. With this entrepreneur strategy, the company has made good amount of profit for further development. This case shows that entrepreneurship and capital capacity are important drivers for achieving good business performance during a business’ start-up stage. After three years’ development, Hengda was ranked among the top 10 enterprises of Guangzhou for the first time in 1999 among more than 1,600 real estate enterprises.

Stage 2: Growth stage (2000-now)

After the rapid development at the very beginning for over three years, Hengda Real Estate Group began to put forth efforts on effectively integrating the resources and standardizing the development process for real estate projects. The business began to pay attention to the management for promoting the beneficial results and for supporting the future development. It indicates that real estate developers consider management as a key area for further growing and improving their competitiveness. After the development of the previous years, the comprehensive strength of Hengda Real Estate Group has remarkably increased, and the development potential has become more prominent. In 2004, Hengda was ranked among top 10 real estate enterprises of China. It simultaneously developed and sold over 10 communities such as Jinbi Jade Residence and Jinbi Harbor in Guangzhou, thus preliminarily becoming competent in expanding projects all over the country in the aspects such as the development experience, good reputation of the brand, scale, and strength.

Since 2006, Hengda has substantively leaped in the scale and brand by strategically developing about 50 projects in more than 20 major cities such as Guangzhou, Tianjin, Chongqing, Shenyang, Wuhan, Chengdu and Nanjing. Hengda has also achieved supernormal noticeable development in the first-class management team and the successful development mode, thus winning the favor of international capital tycoons.

In the year 2009, Hengda was successfully listed at Hong Kong Exchange Union, and the closing price of its shares appreciated by 34.28% than the issue price, setting a record of the total market value of 70.5 billion Hong Kong dollars. Hengda becomes the largest non-state-owned real estate enterprise in China, listed in Hong Kong stock market.

Case 4: Greentown China Holdings Limited

Greentown China Holdings Limited (“Greentown” or “the Company”, and its subsidiaries the “Group”) together with its associates and jointly controlled entities (the “Greentown Group”), established in 1995 in Hangzhou, is one of the leading property developers in China. It commands a leading position in the industry by leveraging on its quality properties. It primarily develops quality residential properties mainly targeting middle to high income residents in China. From 2005 to 2010, Greentown has been ranked for six consecutive years as one of the TOP 10 property enterprises in China, according to the survey conducted jointly by four authoritative institutions, including Enterprise Research Institute of the Development Research Center of the State Council, China Real Estate Association, Qinghua University Real Estate Research Center and China Index Institute.

Stage 1: Start-up stage (1995- 2000)

Greentown was officially incorporated in January 1995. In 2000, the market share of Greentown has arrived at 15% in Hangzhou market. In this stage, the Group fully focused its property development operations in Hangzhou and other local cities within Zhejiang Province. This development led the Greentown Group to the establishment of a leading firm in Zhejiang real estate market.

Stage 2: Growth stage (2000-now)

Since 2000, Greentown started to extend its regional real estate development to national market. Company has established its advantages in high quality products and national famous brand after six years' development during start-up stage. The firm formed an experienced management team with strong project operations ability. Quality and sizable land bank has been established, which provides a sound foundation for the company to enter into growth stage. With the good development, the company has been listed in 2006 in Hong Kong stock market.

In this stage, Greentown China has become a national player in the residential property market with focus on the markets in Shanghai, Beijing and other strategically selected cities across the country, including Qingdao in Shandong Province, Nanjing in Jiangsu Province, Hefei in Anhui Province, Changsha in Hunan Province and Urumqi in Xinjiang Uygur Autonomous Region. Due to the Group's national expansion strategy commenced in 2000, Greentown has successfully extended its business to other important cities. This expansion has boosted the Group's business growth and reputation further. It indicates that the enterprise has cultivated its competitiveness in resource and scale expansion. According to its annual report, as at 31 December 2009, the Greentown Group's premier land bank comprises over 30 million m² of total Gross floor area. This land bank will ensure the Group's

sustainable and steady development in the coming years. Leveraging on its quality human resources and effective corporate management structure, Greentown has established a strong presence in Zhejiang province and other cities where it has operations. The Group is confident that its excellent track record in developing high quality projects and outstanding operational capabilities has laid a solid foundation for its further expansion.

4.5.2 Discussion on the development stages

The above background discussions on the four selected case studies provide good basis for analyzing the characteristics of business development stages for real estate developers. As mentioned, there are generally two development stages including start-up stage and growth stage in the development of real estate industry. In the start-up stage, the real estate developers grow with scale and have to consider all types of uncertainties and variables as they do not have experience and lack of capital and capability. When developers gain sufficient experiences and have made progress in scale and profitability, they will normally consider expanding their business, which leads them to the growth stage.

Stage 1: Start-up stage

A real estate organization usually starts with a simple business organization systems. The business objective, expectations, mechanisms, operation procedures are not fully consolidated and are subject to changes. The primary objective for real estate developers during start-up stage is to survive. Usually, the real estate company is problem-oriented in this stage. Business leaders in real estate market are busy with many difficulties and problems when their business just starts. Although the employees and leaders have good intention in business planning, there is not enough

unity, commitment or follow-through to carry out them. This is echoed with Wang, the general manager of Vanke, mentioned that the initial stage for Vanke was at a chaotic organization, lack of standard procedures, orientation, clarity, mechanism, and capability. Hence, managers involve too many disciplines of diversified business activities. Therefore, after a period of time, there will be recognition on the need for more formalized structures, mechanisms, and clarification of objectives, expectations, focused segment, and roles.

The external environment for real estate developers at the start-up stage is complex and dynamic. The businesses have less understanding on the practice of real estate market. For example they have less knowledge about the land use rights and less information about the land prices, and the processes to acquire land. The real estate developers rely on their relations with local governments in order to acquire one parcel of land. If successful, by selling the property, the developers can obtain their “first bucket of gold” and survive in the real estate market, and move to growth stage.

Furthermore, real estate developers start their business in their local regions. Most of developers started their business at one city and focus on developing projects in this region. Developers’ knowledge of the local market and communities and the connections with local governments are crucial in gaining their competitive edge at this stage. In the start-up stage, some real estate developers will grow in size and obtain profit for further development in growth stage. Nevertheless, there are other developers who may not able to grow and instead make loss, thus forced to leave the market regrettably.

Stage 2: Growth stage

Those real estate developers who gained good experiences and made successful business performance during the start-up stage will move forward to growth stage. The number of these firms is nevertheless limited. During growth stage, the businesses will expand their business from local market to cross-regional areas.

It is at this stage that developers will realize the importance of having clear business objectives and focuses, effective business strategies, the proper organizational structure and operation mechanism within the business. The top leaders of the real estate developers can make proper decisions and allocate resources effectively as they are clearer about their goals. For examples, the cases of Vanke, Gemadale, and Greentown expanded their regional business to national areas after having consolidated their start-up, when their top management is clear and confident about the future of their business. Furthermore, having experienced the start-up stage, developers have more channels and knowledge about the practice of real estate practice. For example, they will be more knowledgeable of the processes of bidding for land bank, the government regulations and they have more business relations. These knowledge and experiences enable the real estate developers to expand beyond their traditional localized real estate business zones. Greentown, for example, after consolidation of start-up, became a national player in the residential property market with focusing on operations in Shanghai, Beijing and other strategically selected cities across the country, including Qingdao in Shandong Province, Nanjing in Jiangsu Province, Hefei in Anhui Province, Changsha in Hunan Province and Urumqi in Xinjiang Uygur Autonomous Region.

On the other hand, the real estate developers' organization structure is decentralized in the growth stage. The functional and regional managers become competent to handle

complex business issues. The business operation system and management mechanisms become more mature due to the push by the growth. The businesses will also meet new challenges from competitors, but these challenges can become forces to drive the businesses to further developed stages.

Based on the above discussions and the interviews with the professionals working in these cases investigated, the real estate developers' characteristics at both start-up and growth stages can be highlighted in Table 4.8.

Table 4.8 The characteristics of the real estate developers at two major business stages

	Start-up stage	Growth stage
Corporate objective	Not clear, lack of vision	The corporate vision and expectations are clear and well enforced
Corporate Strategy	Not clear, problem-oriented, opportunistic and diversified	More clear and focused
Internal organization environment	Not well established	Structured and formalized
Growth pattern	Slow and gradual growth	Fast growth and scale expansion
Land banking	Acquire land relying on relations with local government ; opportunistic; independent	Acquire land by public bid, or auction; Focus on key regions or cities; acquire land by cooperative development
Financial strategy	Owners, allotment of shares and bank	Focus on bank and seek for more financial channels, e.g., listed on store market
Management	Entrepreneurial, direct supervision with absolute power	Entrepreneurial, and more decentralized, co-ordinate
Housing product	Diversified product, including housing product	Focus on residential housing property, with more disparate product types
Customers	Scattered and passively to be chosen	market segmentation and market targeting and make them loyal lifetime
Decision making approach	Based on opportunity	Based on external environment and it is more scientific decision making
Corporate culture	Individualism and occlude	Teamwork and open

Based on the above analysis on the development stages for real estate developers, it can be summarized that the following aspects have important influence to real estate developers' competitiveness in the Chinese real estate market:

- Access to a diverse range of capital resources,
- Annual land reserves,
- Organizational culture resources,
- Availability of mature decision-making mechanism,
- Governance mechanism,
- Innovation and reform mechanism on organizational structure,
- Appropriate incentive mechanism,
- Internal surveillance and reward mechanisms on senior managers,
- Isolating mechanism,
- Autonomous and flexible market-oriented operation mechanism,
- Effective coordination mechanism across the firm,
- Integration mechanism,
- Effective corporate ownership,
- Marketing orientation capability at initial stage,
- Learning capability,
- Capability to expand finance channels and to manage cash liquidity,
- Growth capability,
- Investment decision-making capability,
- Entrepreneurship,
- Scientific capital management capabilities,
- Risk management capability (response to policy and system changes),
- Good team collaboration capability,
- Marketing-oriented R&D Capability,
- Organizational Capability,
- Time-to-market Capability,

- Land purchase price negotiation Capability,
- Housing product innovation capability (e.g. features or designs).

4.6 Summary

Understanding the development of real estate developers is essential for understanding their competitiveness. This chapter presents a comprehensive understanding on the development of the real estate developers in the Chinese real estate industry. The investigation on the characteristics and development of real estate developers has set up important foundation for examining the competitiveness indicators for real estate developers. Little studies have been completed in previous research works on the characteristics of the real estate developers in China. The analysis in this chapter on how a developer competes in the market provides the basis for identifying properly the indicators which can reflect effectively developers' competitiveness.

The characteristics of real estate developers are explored along two aspects including the business value chain activities, and the relations with stakeholders involved in the process of property development. Based on this, the business development stages for real estate developers are identified by examining four case studies. The detail examination on these three aspects has highlighted the key areas where developers' competitiveness comes from. These areas will be further addressed when identifying developers' competitiveness in next chapter.

**CHAPTER 5 COMPETITIVENESS
INDICATORS FOR REAL ESTATE
DEVELOPERS**

CHAPTER 5 COMPETITIVENESS INDICATORS FOR REAL ESTATE DEVELOPERS

This chapter develops a pyramid framework for understanding competitiveness of real estate developers from a dynamic perspective. Following the analytic framework, a set of competitiveness indicators are formulated.

- *5.1 Introduction*
- *5.2 Review of Principles and Practices for Identifying Competitiveness Indicators*
- *5.3 A model for understanding the competitiveness of real estate developers*
- *5.4 Competitiveness indicators for real estate developers in China*
- *5.5 Summary*

CHAPTER 5 COMPETITIVENESS INDICATORS FOR REAL ESTATE DEVELOPERS

5.1 Introduction

This chapter is to investigate systematically the competitiveness indicators for real estate developer in the context of real estate industry in China. A model is developed for guiding the investigation on a set of indicators for understanding competitiveness of real estate developers who have business in the real estate market in China. This chapter firstly flashes back to the previous chapters in order to recall the major references for achieving the aims as set out in this chapter. After that, a pyramid framework is established for understanding competitiveness of real estate developers from a dynamic perspective. In line with this framework, a set of competitiveness indicators are formulated.

5.2 Overview of Theories and Practices for Identifying Competitiveness

Indicators

The competitiveness is one of the most important concepts in modern economic and managerial thinking. Nonetheless, there are many definitions about competitiveness, which have been addressed in Chapter 2. The concept has received various debates in spite of widespread acceptance of its importance. These discussions and definitions are not systematic. This is particular true when discussing it within the real estate business which is characterized as complex, intensely competitive, fast-moving, and turbulent. Therefore, this study is to construct an alternative framework to guide the investigation to ensure that comprehensive understanding on competitiveness can be gained.

Extensive efforts in previous chapters have been devoted to the reviews on theories and practices for understanding firms' competitiveness. For example, Chapter 2 investigated the theories on firm competitiveness such as Porter's models on Competitive Advantage and Competitive Strategy, the Resource-Based, Core Competence approach and Dynamic competence theory. These theories complement each other in explaining the sources of firm competitiveness, and in turn provide the platform for setting up an alternative framework for addressing the competitiveness of real estate developers.

There are a number of guidelines and principles available for identifying competitiveness indicators. For example, it is suggested that competitiveness should cover the specific characteristics of real estate industry in a local context. Considering that the competitiveness indicators could be very different if the business activities are conducted under different market environments, Chapter 3 and 4 were therefore devoted to investigate the characteristics of the China's real estate industry and real estate firms. This chapter incorporates the particular characteristics of the Chinese real estate business environment in the establishment of competitiveness indicators.

As addressed in Chapter 2, the existing studies on the subject of competitiveness for real estate firms have various limitations. These limitations can be highlighted as follows: The competitiveness indicators for addressing the competitiveness of real estate firms have not been formed systematically and they do not incorporate the focus and key characteristics of the type of business. Secondly, previous studies address the competitiveness theory and practices mainly from static views. In fact, the indicators for addressing competitiveness should be able to incorporate the dynamic nature of real estate business environment. The static view limits the effectiveness of

the competitiveness assessment methods developed in the previous studies. Therefore, there is a necessity for an alternative and dynamic approach to understand the competitiveness of real estate firms.

5.3 An alternative framework for understanding the competitiveness for real estate developers

As discussed above, it is necessary for employing a dynamic and systematic framework to help real estate developers to understand their competitiveness. This framework should have the following characteristics and advantages:

- Applying interactively the theories in competitiveness of firms and providing a systematic framework for understanding the competitiveness in the context of real estate industry.
- Provide a systematic approach for real estate developers to understand their competitiveness, refine their management and development process, and explore more about the sources of competitive advantages and superior performance in the real estate industry.
- Provide an alternative framework for real estate developers to identify properly the appropriate competitiveness indicators from various perspectives that are tailed for Chinese real estate industry. The framework can be employed as the guideline for identifying the competitiveness indicators in the following sections of research.

As reviewed in Chapter 2, there are various types of definitions on the competitiveness at firm level. Some believe that firms with certain capabilities or core competence can be considered competitive in the real estate market. Others suggest that developers with possession of resources, such as the land resources and capital

resources are competitive. There is lack of consensus on the concept of competitiveness for real estate developers. Based on the understanding of various theories and definitions presented in previous studies, the competitiveness for real estate developers can be defined as the unique resources, the capabilities that are difficult to be imitated by competitors, and the dynamic management mechanism that can adapt for the dynamic market environment and achieve better profitability than their competitors in the market. In order to sustain competitiveness in the market, developers need to adjust and promote their resources and capabilities continually by adopting a dynamic mechanism as there are various uncertainties in external environment. The application of dynamic approach request that developers shall match their resources and capabilities with both internal and external environment, and identify effective strategies for improving competitiveness. This integrated capability is gained through the whole process of real estate project development, including plan, construction, sale, and or lease activities. The development path for gaining competitiveness for developers is in line with the project development stages.

Based on this understanding on the development of real estate industry and developers and the literatures on competitiveness for real estate developers, a conceptual framework is proposed for identifying proper indicators for examining the competitiveness, and this framework is shown in Figure 5.1. Fig.5.1 is developed from the model Fig. 3.1 in Chapter 3. The framework consists of key components of the dynamic environments, the three essential elements for identifying the competitiveness of real estate developers, including resources, capabilities, and organizational mechanism, and the strategies for competitiveness improvement.

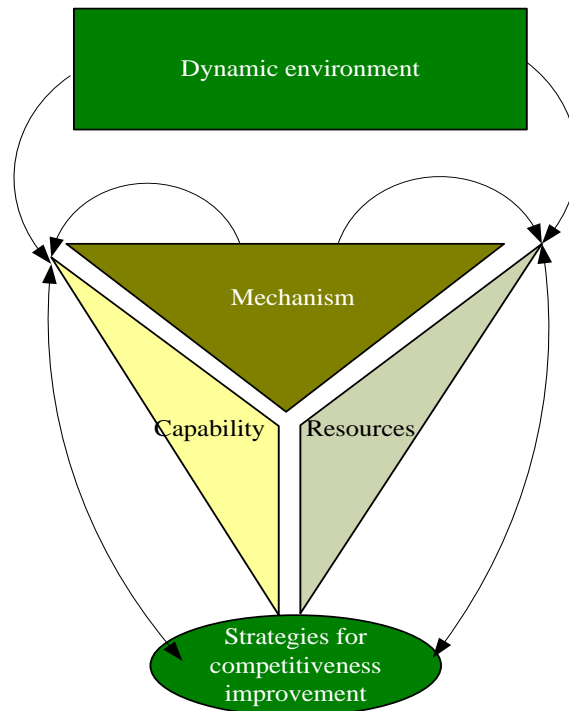
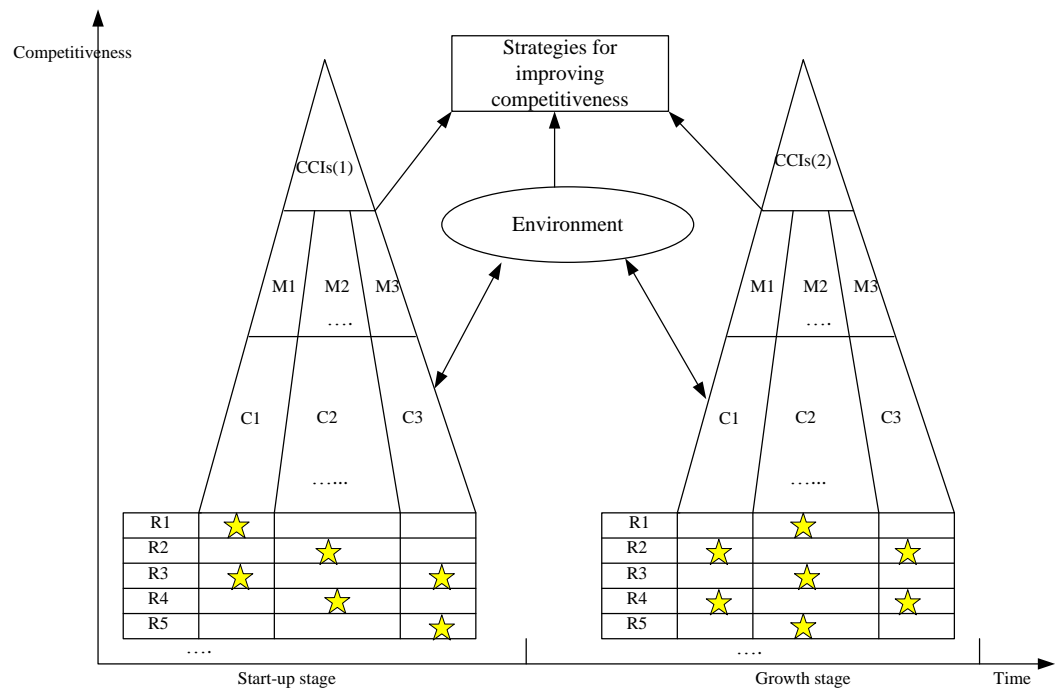


Figure 5.1 The conceptual framework for understanding competitiveness of real estate developers

It can be seen from the conceptual framework (Figure 5.1), there are interrelationships between resources, capabilities and dynamic mechanism. In order to adapt to the changing environment, decision makers in real estate firms need to set up dynamic mechanism to integrate both resources and capabilities in order to gain competitiveness in the competitive business market. As those elements presenting competitiveness are dynamic variables, the level of competitiveness is therefore dynamic. As it is presented in Chapter 4, real estate developers have experienced at least two stages in Chinese real estate market. The competitiveness changes when real estate developer grows and develops in the business market. A framework is proposed, as shown in Figure 5.2, to assist in understanding the dynamic nature of competitiveness for real estate developers. According to the framework in Figure 5.2, the competitiveness is not a static concept but a dynamic measurement where different competitiveness indicators have to be adopted for describing organizational competitiveness at different development stages within organization. This framework

will guide the identification of proper indicators for measuring the competitiveness of real estate developers. Whether this proposed framework can reflect the real practices or not is to be verified in the questionnaire survey in the forthcoming chapter 6. These elements in the framework (Figure 5.2) are discussed in details in the following sections.



Notes: R-resources; C-capabilities; M-mechanism; CCIs-core competitiveness indicators
 Figure 5.2 A proposed model for understanding the indicators for measuring the competitiveness of real estate developers

5.3.1 Dynamic Environment

External environment is essential to be considered for firms to enter into a new industry (Pearce and Robinson, 2005; Sherman, *et al.*, 2006). The environment can be divided into the macro environment and industrial level environment. At macro level, there are five main factors that can influence firms' competitiveness, including economic, social, political, technological, ecological factors. The macro environment presents firms with both opportunities and threats. For example, economy and the policy changes are considered essential factor that can influence real estate industry

directly. For the industry structure analysis, Porter's (1980) five forces model provides a useful tool. The industrial structure determines the competition practice in the industry. The practice and development of real estate industry can greatly affect the overall competitiveness for individual real estate developers.

5.3.2 Resources

In the framework, the capabilities and resources are two interactive elements. In the base level, the resources are considered as the supporting elements of the competitiveness. Resources are regarded as passive factors and they are the carrier for capabilities in the firm. Resources influence a firm's competitiveness from internal side and can be controlled by strategic management. According to Barney's view, the resources should be valuable, rare, inimitable and non-substitutable. In real estate industry, the resources mainly include physical resources (land resources, capital resources, and human resources, etc) and intangible resources (good reputation, customer satisfaction and relationship resources with government, etc). And clear understanding the relationship between developer's resources and competitiveness enables developers to utilize their resources in an efficient way.

5.3.3 Capabilities

In the second level, Capabilities are considered as active factors, which can upgrade and improve the resources continually assisted by the dynamic mechanism of the firms. The capabilities for real estate developers mainly include management capability, market capability, land reserve capability, financial capability and networking capability with various collaborators, etc. Whether the firms' resources are activated or wasted depends on the capability and mechanism of real estate firms.

5.3.4 Mechanism

In the third level, Mechanism is considered as the transferring factors, which can help match the resources as well as capabilities to the dynamic environment. The ever-changing external environment brings about great changes to the real estate industry, which make it necessary for developers to set up effective mechanism for adapting and corresponding to these changes. The representative mechanism for real estate firms are decision-making mechanism, coordination mechanism, market-oriented operation mechanism, and innovation mechanism, etc.

5.3.5 Core competitive indicators

In the top, core competitiveness indicators are regarded as effective tools for guiding the decision makers in the real estate developers to conduct appropriate strategies for improving the competitiveness in the market. Core competitiveness is a firm's fundamental strengths which cannot be easily copied by competitors. The identification of CCIs will help firms examine business opportunities where such CCIs contribute most to gaining competitive advantages.

5.3.6 Strategies for improving the competitiveness

Normally, effective strategies will lead to good competitiveness for firms. Based on the analysis on environment, resources, capabilities and mechanism of the framework, the core competitiveness indicators can be identified. By focusing on the CCIs, relevant strategies would be developed to help real estate firms improve their competitiveness. The strategies are those which have good adaptability to the competition environment. Appropriate strategies will lead to good performance in a favorable environment. However, there is no strategy that will make a firm competitive forever. Each firm needs to evaluate its strategy and review the strategic

management process regularly to make sure that competitiveness of firms can be sustained in the market, especially in a dynamic environment.

The conceptual framework is employed for executives and researchers to understand the competitiveness of real estate developers in dynamic environment. Due to changes in the external environment, the competitiveness of real estate developers is not the static performance at a certain time point, but the dynamic adjustment between the internal resources as well as capabilities and the external environment. In this way, the competitiveness for real estate enterprises could be continuously updated and developed by employing the dynamic mechanism in the different development stages. The application of the framework in the real estate business will be used as the guide that leads to a set of competitiveness indicators and it will be discussed in following chapters.

5.4 Competitiveness indicators for real estate developers in China

The topic of competitiveness has been extensively covered in previous studies. These can be broadly classified into those based in resource-based theory (Wernerfelt, 1984; Barney, 1991; Powell, 2001; Newbert, 2008), core competence-based theory (Prahalad and Hamel, 1990; Sanchez and Heene, 2003), dynamic capabilities theory (Teece *et al.*, 1997) and Porter's competitive force theory (Porter, 1990). Of these, Porter's competition force theory assumes that organizations are homogeneous in their stocks of assets and capabilities (Barney, 1991), while the other three theories consider unique resources, core competences and internal and external "dynamic competences" as organizational core competitiveness (Wernerfelt, 1984; Prahalad and Hamel, 1990; Teece *et al.*, 1997). Several methods have been developed for analyzing competitiveness, including the competitiveness index value and competitiveness

indicator approach. For example, the competitiveness of a nation is usually measured by an index value, which can be used to compare and rank a nation's level of competitiveness (IMD, 2004; World Economic Forum, 2004). Drew and Skitmore (1997) developed a multiple regression model, using major competitiveness indicators, for investigating organizational competitiveness for construction contracts. Walsh and Linton (2001), on the other hand, developed an indicator framework for analyzing a manufacturing organization's competitiveness in terms of its technical competencies and managerial capabilities. The following section will address the typical methodologies for assessing organizational competitiveness in order to better understand the selection of competitiveness indicators for real estate developers for continuing study.

5.4.1 Typical methodologies used for assessing organization competitiveness

The existing methodologies for assessing organization competitiveness can be broadly divided into modeling approaches and indicator approaches. This provides a framework for understanding the competitiveness of organizations.

Modeling approaches

Value Chain Model (VCM)

Porter (1985) defined an organization's production process as a VCM in order to examine organizational competitiveness. This value chain includes five primary processed activities: inbound logistics, operation, outbound logistics, marketing and services, and four support activities: firm infrastructure, human resource management, technology development and procurement. Value chain model suggests that a firm's competitiveness comes from all these value chain activities. Thus each activity in the chain needs to be analyzed in order to capture organization's competitiveness.

Portfolio matrix model (PMM)

PMM was developed during the 1970s and early 1980s by a number of leading consulting firms for helping managers better understand the competitive portfolio of businesses. The two dimensions in the matrix model include industry attractiveness and business strength. Industry attractiveness is measured by external factors such as market size and market growth rate, and business strength by internal factors such as market share, profitability and customer service (Hax and Majluf, 1983). By using the PMM, organizational competitiveness is measured in an Attractiveness-Strength coordinate system (Macmillan and Tampoe, 2000).

Competence pyramid model (CPM)

CPM was introduced by Walsh and Linton (2001) for analyzing an organization's competitiveness in manufacturing industry. The model considers organizational competence in four categories: materials, fabrication and assembly, knowledge-based services, and knowledge-embed services. Each category represents one of the faces of a "pyramid". Each pyramid face includes two components: managerial capability at the pinnacle of the pyramid, and technical competency segment at the base of the pyramid (HulshuÚ et al, 1998).

Enterprise Model (EM)

Hatten and Rosenthal (1999) presented an enterprise model (EM) to exhibit business functions and processes for understanding organizational competitiveness. The model presents a schematic network of business functions and processes where business competitiveness rests in. In the schematic network, vertical and horizontal arrows were used, in which vertical arrows represent business functions, for example, marketing, research and development (R&D), operations, and finance; and the

horizontal arrows represented business processes such as product development, order acquisition and post-sale service. EM forms a platform for assessing enterprise-wide alignment and identifying opportunities for performance improvement.

Industrial competitiveness model (ICM)

The study by Oral (1993) presents a competitiveness model, called industrial competitiveness model (ICM), to measure a manufacture's competitiveness at industrial level. In this model, competitiveness is expressed as a mathematical function of the firm's industry mastery position which is indicated by four factors: current position, current comparative position, potential position, and potential comparative position.

Weibull model (WM)

Weibull model (WM) was introduced by Weibull (1951), presenting a method for assessing reliability in the discipline of physics. It is a well recognized model and has been widely used in research. Lin *et al.* (2001) studied the applicability of this model for assessing the competitiveness of manufacturing enterprises at a particular point of time in life cycle, and a typical case study was demonstrated on the basis.

Indicator approaches (IA)

Many research works have been conducted in developing various indicators for examining organizational competitiveness, which can be called indicator approach (IA). The review on previous works has identified 91 relevant works published during the period from 1973 to 2007, which led to the identification of 24 typical competitiveness indicators as shown in Table 5.1, Table 5.2 and Figure 5.3. The frequency of adopting these indicators among the literatures is illustrated in Figure 5.3, which indicates to certain extent different effectiveness in adopting these indicators.

For example, the indicator I₁₂ “innovation capability” has been addressed in 18 works out of the 91 identified works and the indicator I₁₆ “market process management” in 14 references.

Table 5.1 Typical indicator for measuring organization competitiveness

I ₁ -Brand reputation	I ₇ -Entrepreneurship	I ₁₃ -Information Technology	I ₁₉ -Production Efficiency
I ₂ -Core Competence	I ₈ -Financial capability	I ₁₄ -Knowledge Assets	I ₂₀ -Productivity
I ₃ -Cost control and management	I ₉ -Firm Structure	I ₁₅ -Manufacture Capacity	I ₂₁ -Profitability
I ₄ -Cultural Assets	I ₁₀ -Human Resources	I ₁₆ -Market Process management	I ₂₂ -Quality Control
I ₅ -Customer Satisfaction	I ₁₁ -Risk management	I ₁₇ -Market Share	I ₂₃ -Uniqueness of Product
I ₆ -Social responsibility	I ₁₂ -Innovation capability	I ₁₈ - Organization learning	I ₂₄ -Value Creation

Table 5.2 A summary of the typical literature studies on competitiveness indicators

	Year	Authors	Indicators addressed
1	1973	Drucker	I ₁₆
2	1977	Thorelli	I ₉
3	1981	Abernathy and Kantrow	I ₁₂
4	1984	Hayes and Wheelwright	I ₁₅ , I ₂₂
5	1984	McFarlan	I ₁₃
6	1984	Skinner	I ₁₅
7	1985	Baumol and McLennan	I ₂₀
8	1985	Cash and Konsynski	I ₁₃
9	1986	Deming	I ₁₁
10	1987	Chaston and Mangles	I ₇ , I ₁₀ , I ₁₂ , I ₁₃ , I ₂₀ , I ₂₂
11	1987	Clark	I ₁₂
12	1987	Doz and Prahalad	I ₁₂
13	1987	Teece	I ₁₂
14	1988	Dosi	I ₁₂
15	1989	Bambarger	I ₁ , I ₃ , I ₄ , I ₅ , I ₇ , I ₈ , I ₁₀ , I ₁₃ , I ₁₆ , I ₁₉ , I ₂₂ , I ₂₃
16	1989	Bartlett and Ghoshal	I ₂ , I ₆ , I ₉ , I ₁₂
17	1989	Dierickx and Cool	I ₁₃
18	1989	Dertousos	I ₁₅
19	1989	Francis	I ₂₀
20	1989	Hamel and Prahalad	I ₁₂ , I ₁₈
21	1989	McKee and Robinson	I ₂₀
22	1989	Schwalbach	I ₁₇
23	1990	Calantone and Benedetto	I ₂₁
24	1990	Conant <i>et al.</i>	I ₅ , I ₁₆ , I ₂₃
25	1990	Ghemawat	I ₆
26	1990	Porter	I ₃ , I ₆ , I ₁₃ , I ₁₉ , I ₂₄
27	1990	Prahalad and Hamel	I ₂ , I ₃ , I ₅ , I ₆ , I ₁₅ , I ₁₆ , I ₁₇

28	1990	Scherer and Ross	<i>I</i> ₂₃
29	1991	Fiol	<i>I</i> ₄
30	1991	Grant	<i>I</i> ₂ , <i>I</i> ₆ , <i>I</i> ₉ , <i>I</i> ₁₂
31	1992	Charles <i>et al.</i>	<i>I</i> ₈ , <i>I</i> ₁₁ , <i>I</i> ₁₆ , <i>I</i> ₂₀ , <i>I</i> ₂₃
32	1992	Davidow and Michel	<i>I</i> ₁₉
33	1992	Horne <i>et al.</i>	<i>I</i> ₇ , <i>I</i> ₈ , <i>I</i> ₁₀ , <i>I</i> ₂₃
34	1992	Jacobson	<i>I</i> ₁₆
35	1992	Johnson	<i>I</i> ₁₀
36	1992	Kirzner	<i>I</i> ₁₆
37	1992	Leonard	<i>I</i> ₁₂
38	1992	Nelson	<i>I</i> ₂
39	1992	Tunalv	<i>I</i> ₁₅
40	1993	Blaine	<i>I</i> ₂₁
41	1993	Corbett and Wassenhove	<i>I</i> ₂ , <i>I</i> ₁₆
42	1993	Dunning	<i>I</i> ₂
43	1993	Hammer and Champy	<i>I</i> ₅ , <i>I</i> ₁₆
44	1993	Kanter	<i>I</i> ₁₅
45	1993	Peteraf	<i>I</i> ₆ , <i>I</i> ₉ , <i>I</i> ₁₂ , <i>I</i> ₁₃
46	1993	Richard	<i>I</i> ₁ , <i>I</i> ₃ , <i>I</i> ₁₄
47	1993	Spender	<i>I</i> ₁₄
48	1994	Droge <i>et al.</i>	<i>I</i> ₁₇ , <i>I</i> ₂₄
49	1994	Hill	<i>I</i> ₃ , <i>I</i> ₅ , <i>I</i> ₁₅
50	1994	Papadakis	<i>I</i> ₆
51	1994	Swann and Taghave	<i>I</i> ₂₂
52	1995	Cobbenhagen <i>et al.</i>	<i>I</i> ₁₂
53	1995	Collis and Montgomery	<i>I</i> ₆
54	1995	Nobel	<i>I</i> ₁₉ , <i>I</i> ₂₂
55	1995	Ramasamy	<i>I</i> ₃ , <i>I</i> ₁₇ , <i>I</i> ₂₀
56	1996	Evans and Lindsay	<i>I</i> ₁₀
57	1996	James	<i>I</i> ₁₀ , <i>I</i> ₂₁ , <i>I</i> ₂₄
58	1996	Krajewski and Ritzman	<i>I</i> ₂₁
59	1996	Pace and Stephan	<i>I</i> ₁₉ , <i>I</i> ₂₀ , <i>I</i> ₂₁ , <i>I</i> ₂₂
60	1996	Ross <i>et al.</i>	<i>I</i> ₁₃
61	1996	Steensma	<i>I</i> ₁₈
62	1997	Allan	<i>I</i> ₁₈
63	1997	Chung and Jay	<i>I</i> ₁ , <i>I</i> ₁₆ , <i>I</i> ₂₁
64	1997	Ettlie	<i>I</i> ₂₁
65	1997	Grup	<i>I</i> ₆ , <i>I</i> ₁₂
66	1997	Hausman and Montgomer	<i>I</i> ₁₆
67	1997	Kim and Mauborgne	<i>I</i> ₅
68	1997	Simerly	<i>I</i> ₁₁
69	1997	<i>Teece et al.</i>	<i>I</i> ₁₈
70	1998	Buckley <i>et al.</i>	<i>I</i> ₂₀
71	1998	Dou and Philip	<i>I</i> ₄ , <i>I</i> ₁₆ , <i>I</i> ₂₂
72	1998	Ford	<i>I</i> ₁₈
73	1998	Mehra	<i>I</i> ₃ , <i>I</i> ₁₂
74	1998	Michael	<i>I</i> ₄ , <i>I</i> ₇ , <i>I</i> ₉ , <i>I</i> ₁₁ , <i>I</i> ₁₂ , <i>I</i> ₁₈
75	1999	David <i>et al.</i>	<i>I</i> ₄ , <i>I</i> ₁₈
76	1999	Maskell and Malmberg	<i>I</i> ₁₈
77	2000	Khalil	<i>I</i> ₁₂
78	2000	Li	<i>I</i> ₁₂ , <i>I</i> ₁₅ , <i>I</i> ₁₆
79	2000	Rastogi	<i>I</i> ₂ , <i>I</i> ₁₄ , <i>I</i> ₁₆ , <i>I</i> ₁₈
80	2000	Salah	<i>I</i> ₅ , <i>I</i> ₁₇ , <i>I</i> ₁₉ , <i>I</i> ₂₄
81	2000	Severin	<i>I</i> ₃ , <i>I</i> ₁₆ , <i>I</i> ₁₇
82	2000	Tom	<i>I</i> ₁ , <i>I</i> ₅ , <i>I</i> ₆ , <i>I</i> ₇ , <i>I</i> ₈ , <i>I</i> ₉ , <i>I</i> ₁₁ , <i>I</i> ₂₂

83	2001	Barney and Ketchen	$I_2, I_6, I_9, I_{10}, I_{24}$
84	2001	Pemberton <i>et al.</i>	I_{18}
85	2002	Zollo and Winter	I_{18}
86	2003	Ireland <i>et al.</i>	I_7
87	2003	Sohel <i>et al.</i>	I_{11}
88	2004	Art	I_{20}
89	2005	Jeffrey	I_{11}
90	2006	Shen <i>et al.</i>	$I_1, I_5, I_8, I_9, I_{11}, I_{12}, I_{13}, I_{19}, I_{22}$
91	2007	Art	$I_5, I_8, I_{19}, I_{20}, I_{21}$

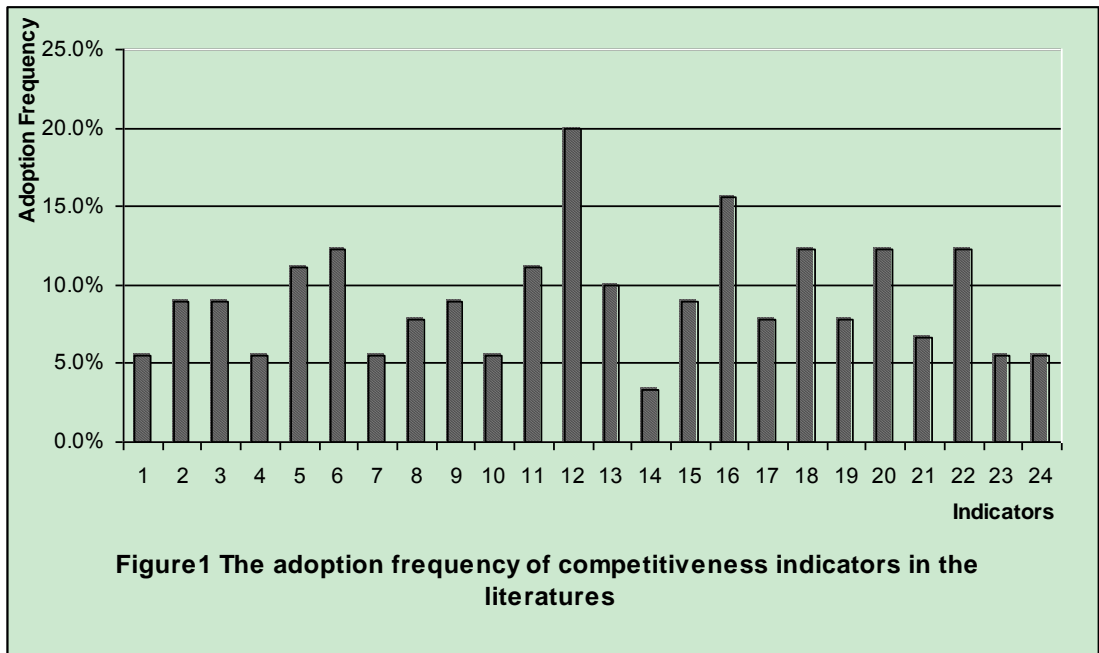


Figure 5.3 The adoption frequency of competitiveness indicators in the literatures

Indicator approach was employed to examine organizational competitiveness qualitatively. Whilst these are various indicator approaches suggested in the literatures, according to the attributes considered, these indicator approaches can be broadly divided into two groups, namely, single attribute index measure and multi-attributes index measure. There are many attributes applied to assess organizational competitiveness in a single aspect, for example, profitability, firm structure, financial assets, and knowledge assets (Rappaport, 1983; Rainer and Kazem, 1994). The practice of examining single aspect of organizational competitiveness can be called as single indicator approaches (SIA). Nevertheless, the limitation of single-attribute index method can be appreciated. For example, it cannot indicate an organization's

overall competitiveness. This leads to the development of multiple-indicators index approach for measuring an organization's competitiveness.

Multiple indicators are often used collectively to examine an organization's competitiveness from different perspectives. It helps to understand an organization's overall competitiveness. Weighted values are usually used for measuring the contribution of multiple indicators, and this method is called Weighted Summation (WS) method. WS method has been widely used when multi-attributes are considered in assessing the performance of an objective variable (Janssen, 1992). The principle of WS is to employ a quantitative model, as shown below, to generate a weighted value:

$$TV = \sum_{i=1}^N W_i \times V(A_i) \quad (\text{Equation 5.1})$$

Where TV is the weighted value or total value of an objective variable (for example, total competitiveness), A_i ($i=1, 2, 3 \dots N$) is one of the multiple attributes used for assessing the TV, W_i is the weighting value of the attribute A_i , and $V(A_i)$ is the performance value of A_i . Model (1) has been widely adopted in the many areas (Hobbs and Meier, 2000). A typical application of the weighted summation approach is the publication of the World Competitiveness Yearbook (WCY) by IMD (2004).

In many studies, indicator approaches (IA) and weighted summation (WS) model, are used in combination. For example, Shen *et al* (2006) adopted this combination and introduced the model of Key Competitiveness Indicators (KCIs) for examining contractor's key competitiveness in construction industry through establishing relative significance between various indicators. Using the KCI model can generate an index value for each competitiveness indicator, and KCIs are identified according to the index values between individual indicators.

5.4.2 Application of Indicator approach: formulation of competitiveness indicators tailored to the Chinese real estate market

Many previous research works have also been conducted in developing various key indicators for examining real estate organizational competitiveness. Porter (1989) presents two critical indicators affecting real estate business' competitive advantage, including lower cost and differentiation. He opined that the real estate company with low cost can achieve lower costs across many processes, including finance and delivering a project. Development with lower costs allows developers to get a higher margin at prevailing price. Differentiation strategy is the ability to have some unique skills or resources that allow an organization to command a premium price. As it is discussed in Chapter 2, Adas (2002) presents a model for helping homebuilding firms identify unique resources across organizational key areas such as management systems, techniques, training and staff development, and organizational structure. Guo and Zhang (2003) opined that unique nature in human resource, capital, house product, custom service and brand is the key in cultivating core competence. A recent study by Li et al. (2009) suggests that the developer's unique financial competency, market coverage and management competencies are vital to its competitiveness.

With reference to the Chinese real estate market, a number of competitiveness indicators have been adopted, for example, in the reports "Blue book of China's enterprises competitiveness" (2006). These indicators are used through a mathematical formula for the calculation of a competitiveness index value. These indicators include sales revenue, the sales' annual average growth rate in recent three years, overall labor productivity and others. In another report, "Research report on Chinese Top10 real estate listed developers", produced jointly by the Real Estate Research Institute, the State Council Development Research Center and The Tsinghua

University Real Estate Institute (2003), the major indicators used includes total assets, total market value, prime operating revenue and total profits. But these criteria are used for assessing listed real estate developers. There are still other references for examining a real estate developer's competitiveness. For example, the joint report by "Guanghua School of Management in Beijing University" and "Shanghai Security News" (2006) has presented 8 indicators for identifying the major real estate developers in China, including return on equity, entrepreneurship, corporate structure, social responsibility and so on.

The indicators adopted in these previous studies for real estate competitiveness are considered fragmental and some are not applicable for examining the competitiveness of real estate developers in the Chinese real estate market. There are a large number of competitiveness indicators found in these literatures, and most of them come from the aforesaid three competitiveness theory. According to the competitiveness indicator framework (Figure 5.2), with incorporating the theoretical understanding on the subject of competitiveness in previous chapters, a list of candidate competitiveness indicators are formulated, as shown in Table 5.3. Competitiveness indicators in firm competitiveness in other fields, as shown in Table 4-1(e.g. McKee and Robinson, 1989; Holt *et al.*, 1994; Wheelen and Hunger, 2002; Kaplan and Norton, 1996; Li *et al.*, 2009 etc) are also considered as the database of indicator selection. The relative significance between these indicators will be examined through practical survey.

Table 5.3 Preliminary list of candidate competitiveness indicators for real estate developers

Section I : Resources		Related literatures
R-1	Access to a diverse range of capital resources	Tuhral and Psilander, 2005;
R-2	Corporate brand reputation	Wheelen and Hunger, 2002
R-3	Annual land reserves	Barlowe, 1986; Interview report by the author, 2009
R-4	Availability of consumer resources	Woodruff, 1997
R-5	Availability of rich human resources	Lado and Wilson, 1994

R-6	Availability of information channels	Porter and Millar, 1985
R-7	Organizational culture resources	Barney, 1986
R-8	Relationship resources with government	Tsang, 1998
R-9	Availability of media resources	Deephouse, 2000; Interview report by the author, 2009
R-10	Knowledge of market information channels	Teece et al.(1997)
R-11	Expertise talents resources in real estate industry	Broderick and Boudreau, 1992; Interview report by the author, 2009
R-12	Availability of long-term strategic partner resources	Pucik, 1988
R-13	Availability of technology resources	Powell and Micallef, 1997
R-14	Availability of strategic alliances resources	Christine, 1997;
Section II : Mechanism		
M-1	Availability of mature decision-making mechanism	Barney and Hansen, 1995
M-2	Governance mechanism	Dyer, 1996
M-3	Innovation and reform mechanism on organizational structure	McGrath et al., 1996
M-4	Transfer mechanism	Eisenhardt and Martin, 2000
M-5	Appropriate incentive mechanism	Gottschalg and Zollo, 2007
M-6	Internal surveillance and reward mechanisms on senior managers	Barney and Hansen, 1995
M-7	Isolating mechanism	Rumelt, 1984; Barney, 1991
M-8	Autonomous and flexible market-oriented operation mechanism	Slater and Narver, 1995
M-9	Effective coordination mechanism across the firm	Grant, 1996
M-10	Integration mechanism	Matusik and Hill, 1998
M-11	Effective corporate ownership	Bebchuk and Roe, 1999
M-12	Horizontal cooperative mechanisms with related partners	D'Aveni, 1994
Section III : Capability		
C-1	Marketing orientation capability at initial stage	Vorhies and Morgan, 2005; Day, 1994
C-2	Learning capability	Nelson and Winter, 1982; Teece et al., 1991
C-3	Capability to expand finance channels and to manage cash liquidity	Liu et al., 2004
C-4	Growth capability	Eisenhardt and Martin, 2000
C-5	Investment decision-making capability	Simon, 1979
C-6	Entrepreneurship	Covin and Miles, 1999
C-7	Scientific capital management capabilities	Maritan, 2001
C-8	Risk management capability (response to policy and system changes)	Wheelen and Hunger, 2002; Froot et al., 1993; Bon, 1994; Interview report by the author, 2009
C-9	Good team collaboration capability	Blomqvist and Levy, 2006
C-10	Marketing schedule control capability	Day, 1994
C-11	Marketing-oriented R&D Capability	Day, 1994
C-12	Organizational Capability	Ulrich and Lake, 1991
C-13	Information technological capability	Bhatt et al., 2005
C-14	Customer relationship management capability	Day and Van den Bulte, 2002
C-15	Development of green strategy to gain social responsibility	Bansal and Roth, 2000
C-16	Time-to-market Capability	Kulatilaka and Perotti, 2000
C-17	Land purchase price negotiation Capability	Ennis, 1996
C-18	Value chain integration capability	Zhang et al., 2002
C-19	Capability to get permit of developing real	Dornbush, 2004

	estate projects approved by government	
C-20	Quality control and planning capability	Chan and Chan, 2004
C-21	Corporate business process management capability	Zairi, 1997
C-22	Inter-departmental coordination capacity	Luo et al.,2006
C-23	Production cost planning and control capabilities	Wheelen and Hunger, 2002
C-24	Housing product innovation capability (e.g. features or designs)	Douma and Schreuder, 1998; Pries and Janszen, 1995

Therefore, In order to ensure effective readability and proper expression of their meanings, these indicators were presented through individual interviews to 15 real estate practitioners and academics as a pilot study. The respondents were invited to comment on whether the candidate indicators are appropriate or not in capturing the competitiveness relevant for real estate developers in China, whether the terminology was correct, and whether some indicators could be deleted from the list or others could be added. Valuable comments were received. In fact, it appears that most of these indicators received favorable comments from all interviewed experts. In line with their comments, minor amendments were made, and the final list of 42 competitiveness indicators was formulated, as shown in Table 5.4.

Table 5.4 The proposed competitiveness indicators for real estate developers

Group	Indicator	Code
Resources (R)	Corporate brand reputation	X ₁
	Annual land reserves	X ₂
	Access to a diverse range of capital	X ₃
	Availability of consumer resources	X ₄
	Availability of rich human resources	X ₅
	Availability of information channels	X ₆
	Availability of media resources	X ₇
	Relationship resources with government	X ₈
	Organizational culture resources	X ₉
	Knowledge of market information channels	X ₁₀
	Expertise talents resources in real estate industry	X ₁₁
	Availability of strategic alliances resources	X ₁₂
Mechanism (M)	Effective corporate ownership	X ₁₃
	Innovation and reform mechanism on organizational structure	X ₁₄
	Isolating mechanism	X ₁₅
	Availability of mature decision-making mechanism	X ₁₆
	Appropriate incentive mechanism	X ₁₇
	Internal surveillance and reward mechanisms on senior managers	X ₁₈

	Horizontal cooperative mechanisms with related partners	X ₁₉
	Autonomous and flexible market-oriented operation mechanism	X ₂₀
Capability (C)	Capability to expand finance channels and to manage cash liquidity	X ₂₁
	Marketing orientation capability at initial stage	X ₂₂
	Investment decision-making capability	X ₂₃
	Entrepreneurship	X ₂₄
	Scientific capital management capabilities	X ₂₅
	Risk management capability (response to policy and system changes)	X ₂₆
	Good team collaboration capability	X ₂₇
	Marketing schedule control capability	X ₂₈
	Housing product innovation capability (e.g. features or designs)	X ₂₉
	Marketing-oriented R&D Capability (grasp the latest consuming trend and market trend)	X ₃₀
	Information technological capability	X ₃₁
	Customer relationship management capability	X ₃₂
	Organizational Capability	X ₃₃
	Development of green strategy to gain social responsibility	X ₃₄
	Learning capability	X ₃₅
	Land purchase price negotiation Capability (e.g., success rate of land bidding)	X ₃₆
	Value chain integration capability	X ₃₇
	The capability to get permit of developing real estate projects approved by government	X ₃₈
	Quality control and planning capability	X ₃₉
	Corporate business process management capability	X ₄₀
	Inter-departmental coordination capacity	X ₄₁
	Production cost planning and control capabilities	X ₄₂

5.5 Summary

Understanding and building up competitiveness are essential activities of strategic management for real estate businesses. Proper indicators for helping measure the competitiveness are therefore indispensable components. This chapter has developed a set of competitiveness indicators for application in the Chinese real estate market. The development of these indicators is based on a framework. Previous studies present various competitiveness indicators but they are not systematic. It is considered important to have a framework for guiding the identification of the indicators. In applying the framework, competitiveness indicators are identified under three major attributes: resources, capabilities and management mechanism. The proposed framework presents an alternative approach which mitigates the weaknesses of past studies where competitiveness indicators are identified with lack of empirical

evidences. The significance of these indicators will be further studied, which will lead to the identification of core competitiveness indicators (CCIs), in next chapter.

**CHAPTER 6 CORE COMPETITIVENESS
INDICATORS FOR REAL ESTATE
DEVELOPERS**

CHAPTER 6 CORE COMPETITIVENESS INDICATORS FOR REAL ESTATE DEVELOPERS

This chapter is to find out the Core Competitiveness Indicators for real estate developers at different development stages. The combination of Monte Carlo Simulation technique and Fuzzy Set theory is employed in this study.

- *6.1 Introduction*
- *6.2 Significance of understanding core competitiveness indicators*
- *6.3 Data survey for identifying CCIs*
- *6.4 Data analysis*
- *6.5 Identification of CCIs at business start-up stage*
- *6.6 Identification of CCIs at business growth stage*
- *6.7 Discussion*
- *6.8 Summary*

CHAPTER 6 CORE COMPETITIVENESS INDICATORS FOR REAL ESTATE DEVELOPERS

6.1 Introduction

In the previous Chapter 5, a proposed framework for understanding the competitiveness for real estate developers was established. This chapter is to verify the framework by identifying the “Core Competitiveness Indicators (CCIs)” that affect the competitiveness of real estate developers at two development stages with referring to the Chinese real estate industry. Monte Carlo Simulation technique and Fuzzy Set Method are used in the process of identifying the CCIs. Research data used for analysis were collected from a questionnaire survey in the Chinese real estate industry. The examination of the CCIs furnishes real estate firms with core indicators to assess their competitiveness, thus adopt appropriate strategies to enhance their competitiveness in the real estate market. The focus of this chapter is to find out the CCIs for real estate developers at different development stages. It is expected that the findings from the study in this chapter can offer new insights into the competitiveness theory with particular reference to Chinese real estate industry. This can also provide references for studying similar topics in other industries and countries.

6.2 Significance of understanding core competitiveness indicators

Whilst there are many competitiveness indicators that have been addressed in Chapter 5, only certain number of indicators is critical for measuring organizational competitiveness. Previous studies pointed out the importance of understanding core factors among many factors.

Collin (2002) advocates that the process of developing key indicators involved the consideration of the following factors:

- Key indicators are general indicators of performance that focus on critical aspects of outputs or outcomes.
- Only a limited, manageable number of key indicators are maintainable for regular use. Having too many (and too complex) indicators can be time- and resource-consuming.
- The systematic use of key indicators is essential as the value of key indicators is almost completely derived from their consistent use over a number of projects.
- Data collection must be made as simple as possible.
- For performance measurement to be effective, the measures or indicators must be accepted, understood and owned across the organization.
- Key indicators will need to evolve and it is likely that a set of Key indicators will be subject to change and refinement.
- Graphic displays of Key indicators need to be simple in design, easy to update and accessible.

There are many approaches of using key indicators to measure organizational competitiveness, such as Key Competitiveness Indicators (KCIs), Key Performance Indicators (KPIs), Critical Success Factors (CSFs) and Core Competences (CCs). Although different terminologies are employed for each, they are used to guide organizations in improving their competitiveness. KCIs approach, for example, has been used in a study by Holt *et al.* (1994). It classifies competitiveness indicators into five groups: contractor's organization, financial considerations, management resources, past experience, and past performance. Each of these groups also includes

various specific indicators. Hatush and Skitmore (1997) proposed five major indicators for assessing contractor competitiveness for construction business, including financial soundness, technical ability, management capability, health and safety, and reputation. Shen *et al* (2006) have also examined the key competitiveness indicators (KCIs) for assessing contractor competitiveness in the Chinese construction market.

KPIs approach, for another example, has been used in the form of compilations of measurements to assess the performance of construction operations (Cox *et al.*, 2003). Similarly, the Department of Environment, Transport and Regions of the UK has advocated the use of KPIs for promoting the performance of construction industry generally (DETR, 2000).

The use of CSFs has also been widely promoted (Ferguson and Dickinson, 1982; Boynton and Zmund, 1984; Tiong *et al.*, 1992) from different perspectives. The identification of CSFs is considered to be important and effective in helping decision-makers focus on a few key areas affected by decisions (Benchtell, 2002).

Likewise, “Core competences” (CCs) theory has been well addressed in previous studies. CCs have been described by Hamel and Prahalad (1994) as “a bundle of skills and technologies” that are used to highlight an organization’s competitive advantages, while Markides and Williamson (1994) define CCs as a pool of experience, knowledge, and systems that together act as catalysts in the creation and accumulation of new strategic assets. For extending the terminology of “core competence”, the term “core competitiveness indicators (CCIs)” is used in this study.

6.3 Data survey for identifying CCIs

The research data in this study was collected using a combination of literature review, content analysis on the existing research reports, pilot study and questionnaires survey. Based on the modified list of indicators as shown in Table 5-4 (Chapter 5), in this chapter, a questionnaire survey was conducted to examine the perceptions of experts on the relative significance of the competitiveness indicators, which helps identify core competitiveness indicators (CCIs). The questionnaire respondents are divided into two groups, namely, practitioners and academics. Information collected from questionnaires is normally processed by calculating average and standard deviation values using Likert Scale (e.g. grade 1 to 5).

The target respondents for the questionnaire survey in this study were among senior managers of developers and researchers in the relevant academic fields. Substantial efforts were contributed to selecting suitable respondents for the survey. A list of 200 senior practitioners was identified from two official databases (China Real Estate Industry Business Directory and Year book for Chinese large scale real estate and construction enterprises). Generally, it is quite a large population and the sample selection will represent various types of real estate developers with different backgrounds. In this research, the judgmental sampling method is used to draw samples from the population of senior managers from real estate developers in China. The respondents for participating in the survey exercise are suggested to have worked in the real estate industry for a long time and hold senior positions in their organizations thus have knowledge and experience in giving professional opinions on organizational competitiveness. Further 200 senior academics were selected from the directory of relevant building and real estate departments in universities in China.

The questionnaire was developed to assess the perceptions of senior managers of developers and professors in academic field on the relative significance of the competitiveness indicators listed in Table 6.1. The questionnaire was divided into two parts. The first part requested for background information about the respondents' previous experience and general knowledge in the area. In the second part, participants were invited to give their opinions on the significance of proposed competitiveness indicators referring to their experiences and academics. A five-point Likert scale ranging from 1 (not significant) to 5 (extremely significant) was adopted to capture the respondents' opinions on the importance of indicators. The sample questionnaire is shown in Table 6.1 and 6.2. In order to increase the response rate, an initial invitation letter was sent by email to the senior managers of the identified real estate developers in China. Email addresses of the practitioners and academics were found in the China Real Estate Industry Business Directory and website of the universities.

Upon the acceptance of the invitation letter, the formulated questionnaire entitled "Competitiveness indicators for real estate developers" were then distributed by both email and post to 400 experts, including 200 practitioners and 200 professors in the academic area. The questionnaire survey was conducted during the period of May-August, 2008. The snowball sampling method was used to get more responses. This snowball sampling helps connect more responses through 'relationship', or in another word, '*Guanxi*'. As the name implies, sample elements are identified by convenience (relations) and through referral networks (Sambasivan and Soon, 2007). This method is acceptable when it is difficult to get response from sample elements selected at random (Sekaran, 2000). Accordingly, some questionnaires were distributed through 'relationships' with those who the research team knows and

conduct research in real estate areas. The use of sampling method led to obtaining a large number of completed questionnaires quickly and economically. Four hundred sets of questionnaires were distributed to the potential respondents. As a result, 70 completed questionnaires were received from real estate developers; and 47 received from academics. According to Prahalad and Hamel (1990), it takes at least 10 years' time for firms to cultivate and produce their core competitiveness. In line with this, the representative developers have to be more than 10 years old. In order to make the questionnaire be representative, 12 of the completed questionnaires from real estate developers are not included into the data analysis as they have less than 10 years' history. As the personal respondent's experience and the organization profile elicited shows, it can be found that most of these developers have experienced start-up stage and are currently at growth stage. The average age of them is 12.5 years.

Sample questionnaire

The questionnaire includes two major parts. In part I, the major background, general knowledge and contact information of the experts are provided by respondents. In part II, there is a list of competitiveness indicators applicable for understanding the competitiveness of real estate developers. The degree of significance of each competitiveness indicator is to be indicated in the following two tables. In the first table, the significance of competitiveness indicators for real estate developers at start-up stage is investigated. Whilst in the second table, the significance of competitiveness indicators for real estate developers at growth stage is explored.

Table 6.1 Significance of competitiveness indicators for real estate developers at start-up stage

Code	Competitiveness Indicators	Degree of significance				
X1	Mature brand value and scale expansion resources	1	2	3	4	5
X2	Annual land reserves	1	2	3	4	5
X3	Availability of extensive real estate policy information; many	1	2	3	4	5

	information channels					
X4	Availability of consumer community resources	1	2	3	4	5
.....					
X42	Effective cost control methods and capabilities	1	2	3	4	5

Note: 1-least significant, 2- fairly significant, 3 significant, 4 very significant and 5 extremely significant

Table 6.2 Significance of competitiveness indicators for real estate developers at growth stage

Code	Competitiveness Indicators	Degree of significance				
X1	Mature brand value and scale expansion resources	1	2	3	4	5
X2	Annual land reserves	1	2	3	4	5
X3	Availability of extensive real estate policy information; many information channels	1	2	3	4	5
X4	Availability of consumer community resources	1	2	3	4	5
.....					
X42	Effective cost control methods and capabilities	1	2	3	4	5

Note: 1-least significant, 2- fairly significant, 3 significant, 4 very significant and 5 extremely significant

6.4 Data analysis

The existing problems in the traditional approach have made it not sufficient in presenting the characteristics of the collected data. For example, respondent's judgment is subjective and fuzzy, the discrete scales (grade 1 to 5) might not be robust enough. The experts surveyed may have different opinions on the weighting values for a particular indicator. Furthermore, the sample received is usually small; therefore the adequacy of the calculation on the measures such as mean value is often challenged. Traditional method for identifying critical indicators in a survey is largely based on the mean value. For example, previous study has used a cut-off value of 4 in the system of 5 Likert scale to select the key factors (e.g. Lu *et al.*, 2008). This traditional method becomes ineffective particularly when there are some extreme responses in the whole sample, which can make the mean value not representative. The traditional method also overlooks the fuzziness in presenting experts' opinions, which further affect the quality of indicator identification. Therefore, this study

proposes a combined alternative approach for selecting CCIs, which applies collectively the Monte Carlo Simulation technique and Fuzzy Set theory, which is expected to mitigate the weakness in the traditional method. In fact, the responses from interviewees on a particular question can be considered as a distribution. Previous studies demonstrate that probability distributions can be effectively processed by simulation approach (Shen, 1990). In this context, Monte Carlo Simulation and Fuzzy Set theory can be used to improve solving the problems embodied in the traditional method. Hence the two methods in this study are combined to assist analysis and identify the core competitiveness indicators.

6.4.1 Monte Carlo Simulation analysis

Monte Carlo Simulation (MCS) is a numerical method to solve the problems in mathematics, physics, engineering and production management areas by randomly sampling relevant stochastic variable or process (Xu, 1985). MCS is a useful tool applied in a situation where there is uncertain and uncontrollable input information whose probability distribution is known and can be handled analytically (Shen, 1993). In order to construct a stochastic variable or process, the parameter related to the problems determines the probability distributions of the variables concerned. As it is mentioned above, the responses from interviewees on a particular question can be regarded as a distribution. As the backgrounds and experience are different and in random nature between the invited experts in the questionnaire survey, the scores allocated to individual indicators by the experts are considered in probability distributions. In this context, the value of score for each indicator should be derived randomly (Shen, 1993). In this context, the distribution can be effectively assessed by Monte Carlo Simulation.

In a questionnaire survey, ideally we should increase sample size to make sure the survey is more representative and meaningful if a full coverage of the target population is not possible. Research has suggested that there will be a convergence of parameters such as mean and standard deviations to their stable values as surveying samples increase. While in reality, it is very difficult to increase sample size until a convergence is achieved. MCS, however, can simulate the increasing samples of a questionnaire survey in a simulative environment. Through increasing samples, MCS can generate more data and lead to the convergence of parameters such as mean and standard deviations. Convergence is a valid way to confirm the efficiency of large numbers of samplings when conducting MCS (Cowles and Carlin, 1996). It is expected that MCS can solve the problem of limited samples and that is the reason why it is used in this research.

6.4.2 Fuzzy set analysis

Although MCS can solve the problem of small sample size, there is still another major deficiency in the identification of critical indicators through surveying. That is the fuzziness of the respondents' opinions in a questionnaire survey has not been incorporated. As pointed out in previous studies that organizational competitiveness is a complicated system. Such system is characterized by complex mechanism, ill-defined system boundary and layers, multiple variables and fuzziness (Feng *et al.*, 1996; Nijkamp, 1986; Feng and Xu, 1999). Particularly, fuzziness exists when organizational competitiveness is described by using a questionnaire survey. Application of Fuzzy Set theory is effective to mitigate the fuzziness problem in questionnaire survey. It utilizes membership probability to identify critical indicators. It thus can avoid the weakness of the traditional cut-off value method, since membership probability implies distribution of experts' views. Therefore, this study

intends to apply fuzzy set theory as an alternative approach to assist real estate developers in identifying their core competitiveness indicators.

Fuzzy theory has been widely used for assisting in decision-making where fuzziness exists in defining variables (Eldukair and Ayyub, 1991; Feng and Xu, 1999; Tah and Carr, 2000; Seo et al., 2004). The specification of decision attributes and decision makers' opinion involves fuzziness, and so it is intended to apply fuzzy theory to assist in identifying the respondents' opinions in selecting CCIs.

Fuzzy sets method was introduced by Zadeh (1965) as an extension of the classical notion of set. According to Zadeh (1965), if X is a collection of objects denoted generically by x , then a fuzzy set \tilde{A} in X is a set of ordered pairs: $\tilde{A} = \{(x, \mu_{\tilde{A}}(x)) | x \in X\}$. $\mu_{\tilde{A}}(x)$ is a value assigned to represent the membership of x in \tilde{A} . If the value of $\mu_{\tilde{A}}(x)$ is nearer to 1, the grade of membership of x in \tilde{A} will be higher. For example, if there are two fuzzy members in a fuzzy set \tilde{A} , namely, X_1 and X_2 and their membership values are defined respectively as 0.4 and 0.7 then, we can denote the fuzzy set as $\tilde{A} = \{(x_1, 0.4), (x_2, 0.7)\}$, where X_2 is more relevant to fuzzy set \tilde{A} , as it assumes the value of 0.7, mostly closing to the maximum value 1 in the set. As discussed previously in this paper, organizational competitiveness is described with fuzziness. Individual competitiveness indicators can be considered as fuzzy indicators, which formulate a fuzzy set. The grade of membership of an individual indicator is considered as the relative significance of the indicator, based on which the weighting values between indicators can be established. Using this combined approach, a number of procedures will be processed in order to identify the CCIs, and these procedures are presented in Figure 6.1.

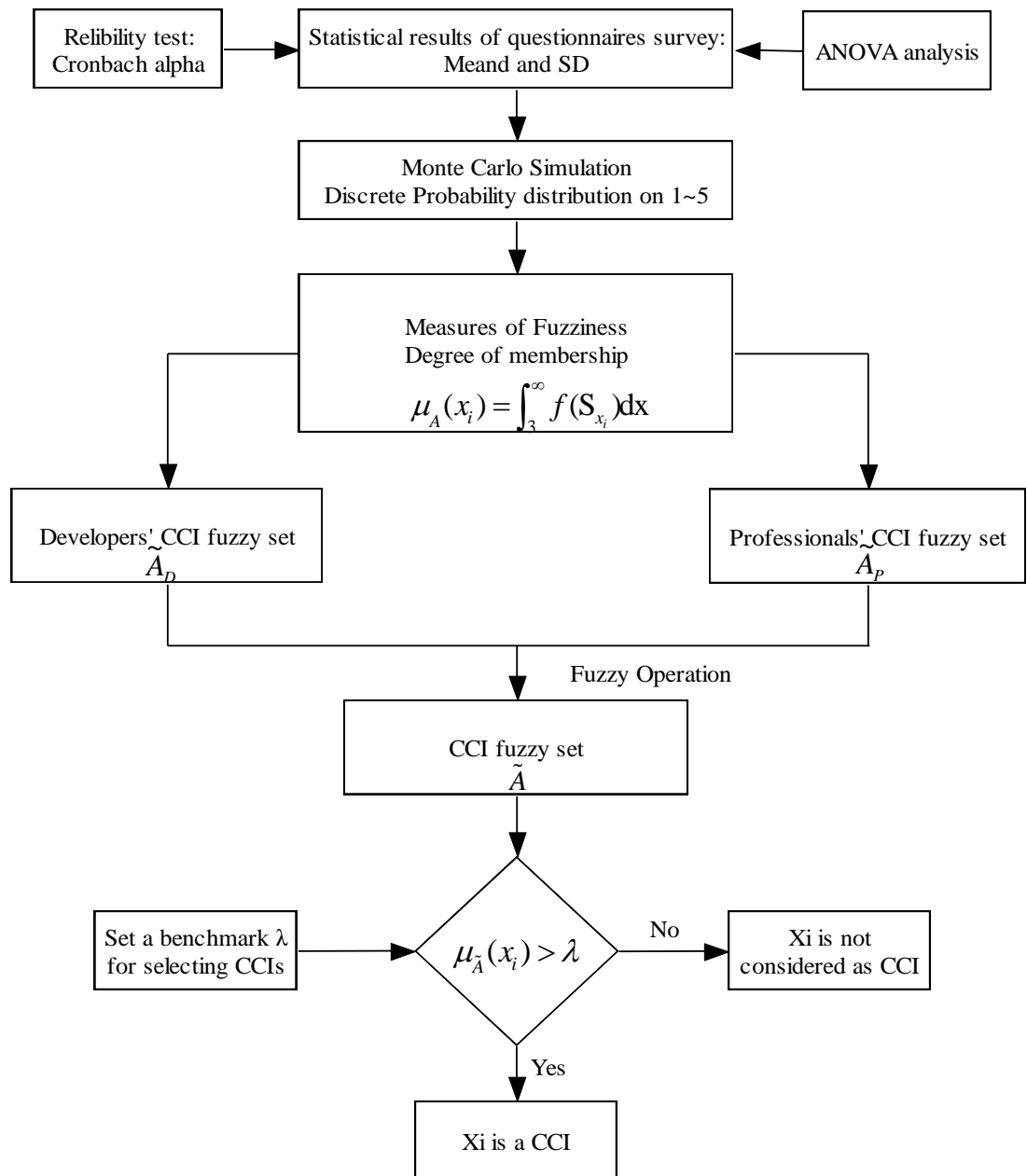


Figure 6.1 The procedure of identifying CCIs

The following sections will describe how the CCIs can be identified by using this combined method in two different development stages, namely, the start-up stage and growth stage.

6.5 Identification of CCIs for real estate developers (REDs) at start-up stage

The start-up period of an organization is a critical time for any business. This is particularly true for REDs, where a large amount of capital is required (Mata and Portugal, 1994; Ratnasingam, 2007). In a fiercely competitive market, only a small

percentage of newly established real estate developers can survive and even then very few of these grow and thrive. Becoming competitive is essential for the survival of real estate developers in Chinese real estate market. Real estate industry is the key economic sector and has substantial impacts to kick-start the economy particularly in these developing countries such as China. It is widely appreciated that real estate business has the linkage with many other economic sectors, for example over 280 economic sectors suggested by Suresh (2003). Thus proper development of real estate firms from their start-up stage has essential impacts to a national economy. There is a need for solutions to help real estate firms to develop proper competitiveness in the start-up stage of their business.

As it is proposed in the competitiveness framework established in Chapter 5, there will be several core competitiveness indicators that help the real estate developers survive in the market. Are there any CCIs for real estate business at start-up stage? What are these CCIs that govern the survival of real estate organizations at start-up stage if there are? How to identify these CCIs at start-up stage? The following sections will address the questions raised above. The procedures of identifying the CCIs by adopting Fuzzy set theory and Monte Carlo approach are presented. In fact, these procedures will be also adopted in the next section where the CCIs for real estate at growth stage are to be identified.

6.5.1 Preliminary analysis on the survey result

By using the survey data about the start-up stage, statistical calculations on the relative significance of competitiveness indicators are conducted, and Table 6.3 summarize the key calculation results. For example, X_1 represents the indicator “brand reputation”. The overall average score of significance of X_1 is 3.49 with

standard deviation (SD) of 0.64. It is worthwhile to note that different response groups give different scores for a same indicator. For example, the developer group assigned the average score of X_1 with 3.50 and standard deviation of 0.71, but academics group gave average score to X_1 with 3.47 and standard deviation of 0.55.

Table 6.3 The significance score for indicators at start-up stage

Group of factor	Indicator code	All (N=105)		Developers (N=58)		Academics (N=47)	
		Mean	SD	Mean	SD	Mean	SD
Resources	X_1	3.49	0.64	3.50	0.71	3.47	0.55
	X_2	4.30	0.66	4.45	0.63	4.11	0.67
	X_3	4.30	0.67	4.47	0.57	4.11	0.73
	X_4	3.60	0.60	3.66	0.58	3.53	0.62
	X_5	3.57	0.60	3.57	0.60	3.57	0.62
	X_6	3.55	0.55	3.59	0.59	3.51	0.51
	X_7	3.42	0.57	3.33	0.60	3.53	0.50
	X_8	4.27	0.59	4.41	0.59	4.09	0.54
	X_9	3.38	0.54	3.38	0.52	3.38	0.57
	X_{10}	4.09	0.68	4.17	0.65	3.98	0.71
	X_{11}	3.54	0.59	3.60	0.49	3.47	0.69
	X_{12}	3.88	0.72	4.02	0.71	3.70	0.69
Mechanism	X_{13}	3.70	0.74	3.53	0.73	3.89	0.70
	X_{14}	3.59	0.63	3.55	0.57	3.64	0.70
	X_{15}	3.77	0.67	3.72	0.70	3.83	0.64
	X_{16}	3.90	0.65	3.88	0.70	3.91	0.58
	X_{17}	3.42	0.68	3.48	0.66	3.34	0.70
	X_{18}	3.67	0.65	3.50	0.54	3.87	0.71
	X_{19}	3.41	0.65	3.55	0.60	3.87	0.67
	X_{20}	3.67	0.70	3.71	0.68	3.87	0.74
Capability	X_{21}	4.56	0.50	4.52	0.50	3.87	0.49
	X_{22}	3.76	0.64	3.90	0.69	3.87	0.54
	X_{23}	3.56	0.60	3.71	0.62	3.87	0.53
	X_{24}	4.00	0.64	3.88	0.59	3.87	0.66
	X_{25}	3.68	0.61	3.81	0.63	3.87	0.55
	X_{26}	3.61	0.61	3.59	0.59	3.87	0.64
	X_{27}	3.57	0.59	3.60	0.59	3.87	0.58
	X_{28}	3.75	0.70	3.76	0.73	3.87	0.67
	X_{29}	3.55	0.54	3.55	0.54	3.87	0.54
	X_{30}	3.78	0.62	3.81	0.71	3.87	0.49
	X_{31}	3.53	0.59	3.60	0.65	3.87	0.50
	X_{32}	3.23	0.59	3.31	0.65	3.87	0.49
	X_{33}	3.58	0.58	3.52	0.54	3.87	0.64
	X_{34}	3.98	0.59	4.00	0.59	3.87	0.59
	X_{35}	3.70	0.59	3.72	0.62	3.87	0.56
	X_{36}	4.12	0.70	4.14	0.76	3.87	0.63
	X_{37}	3.56	0.55	3.53	0.57	3.87	0.54
	X_{38}	3.83	0.66	3.86	0.66	3.87	0.66
	X_{39}	4.02	0.71	3.86	0.71	3.87	0.66
	X_{40}	3.71	0.55	3.72	0.56	3.87	0.55
	X_{41}	3.43	0.62	3.41	0.70	3.87	0.50
	X_{42}	3.95	0.61	4.02	0.55	3.87	0.68

The adequacy of the information in Table 6.3 depends on the reliability of the data collected through the questionnaire survey. It is considered necessary to ensure that the data used are reliable. The competitiveness indicators used in the questionnaire survey are grouped in three categories, namely, resources-related indicators, mechanism-related indicators, and capability-related indicators. The reliability of this classification needs to be checked. In general, the reliability is assessed by examining the consistency with which different items express the same concept (de Vaus, 2002). In this study, Cronbach's alpha coefficient α is used to check the reliability of the classification of three groups of competitiveness indicators. Previous study suggests that Cronbach's alpha coefficient α shall be greater than 0.5 as a minimum, and ideally be greater than 0.7 (Ceng and Huang, 2005) if the data are considered reliable. By using the information provided by the 105 valid respondents, the Cronbach's alpha coefficients are calculated for three groups of competitiveness indicators. The calculation results are shown in Table 6.4. It can be found that Cronbach's alpha coefficients for all indicators across the three groups are more than 0.7. Therefore, the data collected from the questionnaire survey is considered reliable.

Table 6.4 The Cronbach's alpha of data at start-up stage

Resource factor group		Mechanism factor group		Capability factor group	
code	Alpha if deleted	code	Alpha if deleted	code	Alpha if deleted
X ₁	0.705	X ₁₃	0.698	X ₂₁	0.705
X ₂	0.711	X ₁₄	0.700	X ₂₂	0.707
X ₃	0.702	X ₁₅	0.691	X ₂₃	0.707
X ₄	0.700	X ₁₆	0.700	X ₂₄	0.715
X ₅	0.699	X ₁₇	0.699	X ₂₅	0.711
X ₆	0.701	X ₁₈	0.706	X ₂₆	0.710
X ₇	0.716	X ₁₉	0.698	X ₂₇	0.700
X ₈	0.716	X ₂₀	0.702	X ₂₈	0.707
X ₉	0.705			X ₂₉	0.713
X ₁₀	0.694			X ₃₀	0.705
X ₁₁	0.694			X ₃₁	0.703
X ₁₂	0.690			X ₃₂	0.711
				X ₃₃	0.708
				X ₃₄	0.707
				X ₃₅	0.711

X_{36}	0.697
X_{37}	0.703
X_{38}	0.699
X_{39}	0.706
X_{40}	0.706
X_{41}	0.697
X_{42}	0.707

Furthermore, the analysis of variance (ANOVA) was conducted to examine whether the opinions of the two groups of respondents are consistent for each of the CCIs. If a probability value p from ANOVA test below 0.05 is obtained, it normally suggests that there is a high degree of difference of opinions among the groups (SPSS Inc., 2006). In other words, the groups can be considered independent. In this research, there are 12 indicators whose p values are below 0.05. It suggests that the differences of opinions for the 12 indicators among the two groups (developers and academics) are significant. Therefore, the collected data samples from the two groups (developers and academics) should be considered separately.

6.5.2 Monte Carlo Simulation analysis at start-up stage

As it is discussed in the previous section, MCS is adopted to analyze the CCIs at start-up stage. There are various software packages available for conducting Monte Carlo simulations analysis. In this research, the software package Crystal Ball is used. The process of using MCS to analyze competitiveness indicators is highlighted by the example of X_1 . The probability distribution of the responses from developer group for X_1 (with the whole sample of 58) is demonstrated as follows. With reference to the data collected from questionnaires survey, the frequency and cumulative frequency of the experts' opinions on X_1 is summarized as shown in Table 6.5.

Table 6.5 The frequency of the developer' opinion on X_1

Score value	1	2	3	4	5
Frequency	0 (0/58)	0.069 (4/58)	0.414 (24/58)	0.466 (27/58)	0.052 (3/58)
Cumulative	0	0.069	0.483	0.948	1

Frequency

In this context, frequency is the probability for a specific value to occur. The frequency does not obey any distribution function, and the value of the discrete data ranges from 1 to 5. The cumulative probability distribution of X_1 is illustrated graphically as shown in Figure 6.2, 6.3.

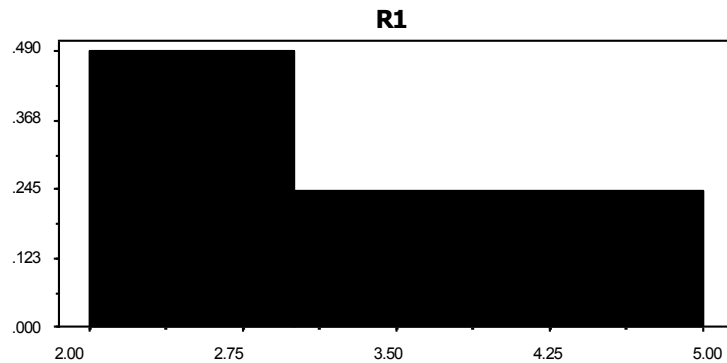
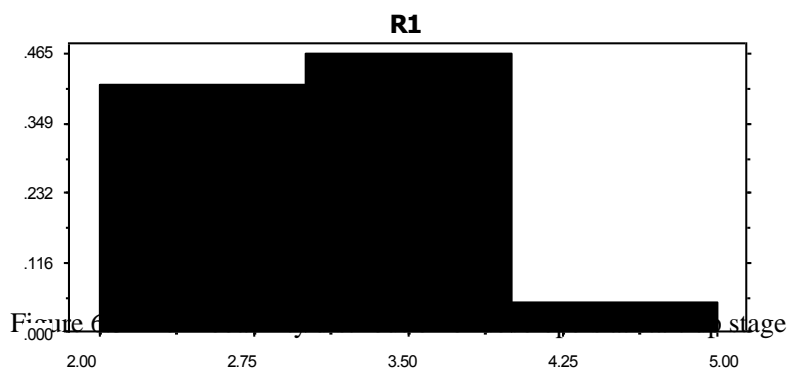


Figure 6.2 The Probability distribution of academy at start-up stage



In order to confirm the probability distribution trend of X_1 in developers and academy groups, 100,000 simulations were conducted. The simulation process took nearly two minutes on T8100 (Duo CPU)/2.1G PC computer. The simulated probability distributions of X_1 in the two groups are shown in Figure 6.4 and 6.5, which appears similar to the probability distribution in Figure 6.2 and 6.3. The simulated mean value begins to be stable when simulations reach 1000, while SD value is still a little fluctuant after 700 and begins to be stable when simulations reach 7000 as shown in Figure 6-6.

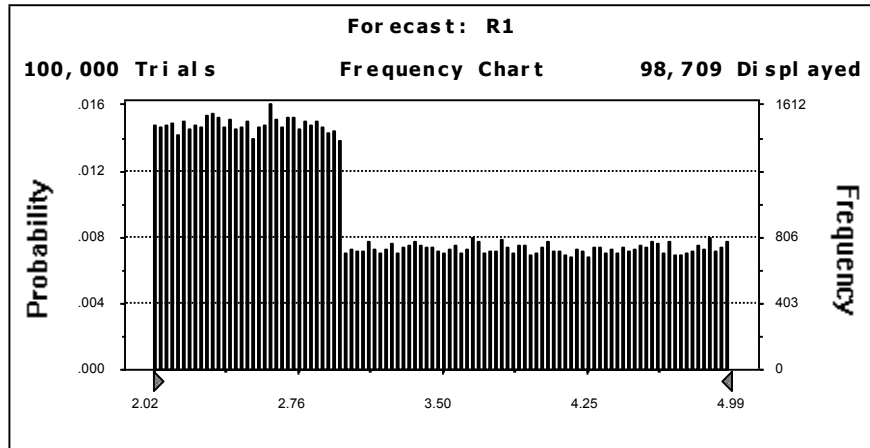


Figure 6.4 The probability distribution of X_1 from academy group by simulating at start-up stage

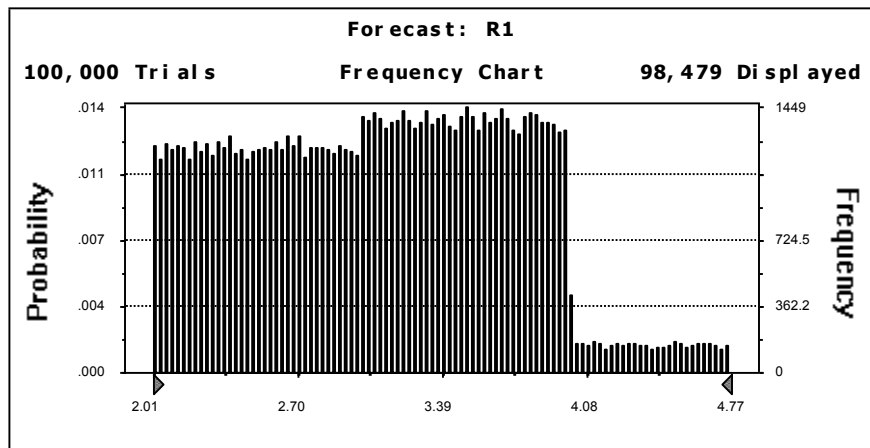


Figure 6.5 The probability distribution of X_1 from developers group by simulating at start-up stage

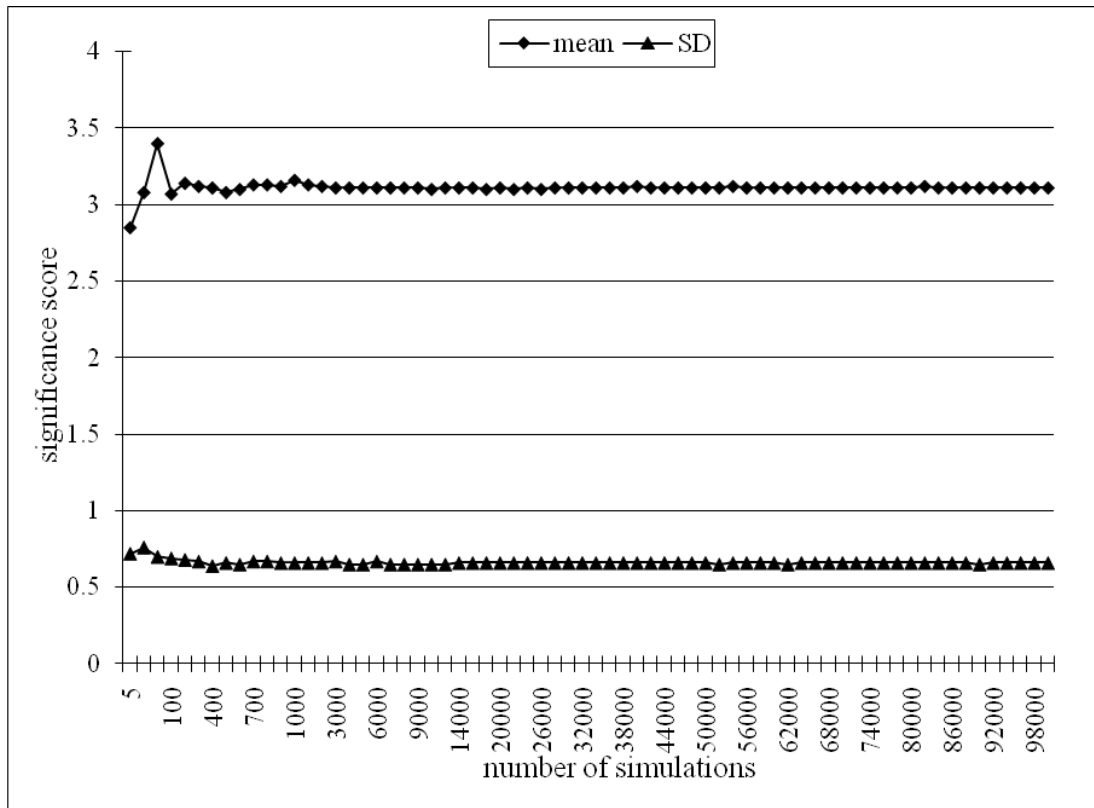


Figure 6.6 The convergence of mean and SD value for X₁ from developers' group by simulating at start-up stage

Simulations have also been conducted for other indicators by the same procedures as adopted for X₁. The mean and standard deviation value of each indicator by using simulation is shown in Table 6.6. The results in the Table 6.6 are considered more reliable than those in Table 6.3 as simulation process generates much larger samples and approximates the convergence of mean and standard deviations as samples increase in a questionnaire survey. In general, the more samples, the better the results will be.

Table 6.6 The Mean and Standard Deviation value from Monte Carlo Simulation

Group of factor	Indicator code	Developers (N=58)		Academics (N=47)	
		Mean	SD	Mean	SD
Resources	X ₁	3.11	0.66	3	0.58
	X ₂	3.99	0.6	3.83	0.55
	X ₃	4.02	0.58	3.91	0.57
	X ₄	3.18	0.61	3.64	0.45
	X ₅	3.13	0.59	3.11	0.64
	X ₆	3.6	0.41	3.5	0.29
	X ₇	2.9	0.6	3.5	0.29

	X ₈	3.99	0.58	3.71	0.5
	X ₉	2.9	0.57	2.95	0.57
	X ₁₀	3.86	0.56	3.81	0.55
	X ₁₁	3.5	0.29	3.03	0.68
	X ₁₂	3.84	0.56	3.24	0.7
Mechanism	X ₁₃	3.09	0.73	3.77	0.53
	X ₁₄	3.57	0.38	3.18	0.72
	X ₁₅	3.26	0.72	3.68	0.48
	X ₁₆	3.45	0.68	3.66	0.47
	X ₁₇	3.06	0.63	2.93	0.68
	X ₁₈	3.02	0.58	3.78	0.53
	X ₁₉	3.08	0.63	2.88	0.61
	X ₂₀	3.71	0.5	3.18	0.72
Capability	X ₂₁	4.5	0.29	4.5	0.29
	X ₂₂	3.77	0.53	3.54	0.35
	X ₂₃	3.64	0.45	2.91	0.57
	X ₂₄	3.66	0.47	3.85	0.56
	X ₂₅	3.68	0.48	3.54	0.35
	X ₂₆	3.6	0.41	3.65	0.46
	X ₂₇	3.59	0.41	3.59	0.41
	X ₂₈	3.79	0.54	3.71	0.5
	X ₂₉	3.53	0.34	3.54	0.35
	X ₃₀	3.77	0.53	3.53	0.33
	X ₃₁	3.67	0.47	3.5	0.29
	X ₃₂	2.88	0.66	2.71	0.5
	X ₃₃	3.53	0.34	3.64	0.45
	X ₃₄	3.71	0.5	3.69	0.48
	X ₃₅	3.63	0.45	3.57	0.39
	X ₃₆	3.97	0.58	3.8	0.54
	X ₃₇	3.57	0.38	3.54	0.34
	X ₃₈	3.72	0.5	3.69	0.49
	X ₃₉	3.4	0.73	3.89	0.57
	X ₄₀	3.58	0.39	3.57	0.38
	X ₄₁	3.05	0.64	3.5	0.29
	X ₄₂	3.68	0.48	3.74	0.52

6.5.3 Fuzzy set approach: the final identification of CCIs at start-up stage

As it is discussed in the previous sections, respondents' opinions in the questionnaire survey are subjective and involve fuzziness. Fuzzy set theory is therefore applied to assist in identifying the CCIs. The data used for the fuzzy set analysis are the results of MCS conducted in previous section, as shown in Table 6.6.

In order to adopt Fuzzy set theory to identify CCIs, the symbol \tilde{A} is used to represent a set of CCIs, noted as CCI set. This CCI set is designed as a fuzzy set:

$$\tilde{A} = \mu_{\tilde{A}}(x_0) / x_0 + \mu_{\tilde{A}}(x_1) / x_1 + \dots = \sum_{i=0}^n \mu_{\tilde{A}}(x_i) / x_i \quad (\text{Equation 6.1})$$

where x_i is an indicator listed in Table 6-7. n denotes for the number of indicators, which is 42. $\mu_{\tilde{A}}(x_i)$ denotes the degree of membership of x_i in the fuzzy set \tilde{A} , and $\mu_{\tilde{A}}(x_i) \in [0,1]$. It should be noted that in Eq. 1, “+” and “/” do not denote “plus” and “divided by”. They are symbols in a fuzzy set (Zimmermann, 2001). $\mu_{\tilde{A}}(x_i) / x_i$ means that the degree of membership of x_i in \tilde{A} is $\mu_{\tilde{A}}(x_i)$, and “+” can be read as “and”.

As designed in the questionnaire survey, the significance of a specific competitiveness indicator is measured between 1 and 5. Therefore the score value 3 is considered as a neutral level for the demarcation between importance and unimportance. Thereafter, it is reasonable to consider that if the membership degree of a specific competitiveness indicator is over 3, the member, namely, the indicators belongs to the important group. Although the values for individual indicators in Table 6-7 are possibility values generated from simulation process based on fuzzy set theory, the possibility for a variable to belong to a group is the degree of membership of the variable in the fuzzy set (Zimmermann, 2001). Hereby, the degree of membership $\mu_{\tilde{A}}(x_i)$ can be described as follows:

$$\mu_{\tilde{A}}(x_i) = \int_3^{\infty} f(S_{x_i}) dx = 1 - P_f \quad (\text{Equation 6.2})$$

where P_f represents the possibility that the variable does not belong to the group.

The calculation results by using Eq. 2 are presented in Table 6-8. In order to identify whether or not an indicator is a CCI, a benchmark value should be preset, in other words, $\mu_{\tilde{A}}(x_i)$ should meet a certain given value (λ). Then the indicator x_i will be considered as a core competitiveness indicator.

As the survey data come from two groups of experts, namely, academics and developers, different groups will result in different CCI fuzzy sets, represented by \tilde{A}_p and \tilde{A}_d respectively. According to Eq.2 and data in Table 3, the degree of membership $\mu_{\tilde{A}}(x_i)$ can be calculated. The results $\mu_{\tilde{A}_p}(x_i)$ and $\mu_{\tilde{A}_d}(x_i)$ are shown as Table 6.7.

Table 6.7 The degree of membership of indicators for CCIs

Indicator	Developers	Academics	Integrated
	$\mu_{\tilde{A}_d}$	$\mu_{\tilde{A}_p}$	$\mu_{\tilde{A}}$
X ₁	0.566	0.500	0.566
X ₂	0.951	0.934	0.960*
X ₃	0.961	0.945	0.970*
X ₄	0.616	0.923	0.923*
X ₅	0.587	0.568	0.590
X ₆	0.928	0.958	0.963*
X ₇	0.434	0.958	0.958*
X ₈	0.956	0.922	0.961*
X ₉	0.430	0.465	0.465
X ₁₀	0.938	0.930	0.950*
X ₁₁	0.958	0.518	0.958*
X ₁₂	0.933	0.634	0.933*
X ₁₃	0.549	0.927	0.927*
X ₁₄	0.933	0.599	0.933*
X ₁₅	0.641	0.922	0.922*
X ₁₆	0.746	0.920	0.920*
X ₁₇	0.538	0.459	0.538
X ₁₈	0.514	0.929	0.929*
X ₁₉	0.551	0.422	0.551
X ₂₀	0.922	0.599	0.922*
X ₂₁	1.000	1.000	1.000*
X ₂₂	0.927	0.939	0.949*
X ₂₃	0.923	0.437	0.923*
X ₂₄	0.920	0.935	0.944*
X ₂₅	0.922	0.939	0.947*
X ₂₆	0.928	0.921	0.940*
X ₂₇	0.925	0.925	0.940*
X ₂₈	0.928	0.922	0.941*

X ₂₉	0.940	0.939	0.955*
X ₃₀	0.927	0.946	0.954*
X ₃₁	0.923	0.958	0.962*
X ₃₂	0.428	0.281	0.428
X ₃₃	0.940	0.923	0.949*
X ₃₄	0.922	0.925	0.939*
X ₃₅	0.919	0.928	0.939*
X ₃₆	0.953	0.931	0.960*
X ₃₇	0.933	0.944	0.955*
X ₃₈	0.925	0.920	0.938*
X ₃₉	0.708	0.941	0.941*
X ₄₀	0.932	0.933	0.948*
X ₄₁	0.531	0.958	0.958*
X ₄₂	0.922	0.923	0.938*

*Note: The degree of membership is more than 0.85.

According to the definition of the union operator on fuzzy theory by Yager (1980),

The CCIs fuzzy set can be described as follows:

$$\tilde{A} = \tilde{A}_p \cup \tilde{A}_D = \{x, \mu_{\tilde{A}_p \cup \tilde{A}_D}(x) | x \in X\} \quad (\text{Equation 6.3})$$

where

$$\mu_{\tilde{A}_p \cup \tilde{A}_D}(x) = \min\left\{1, (\mu_{\tilde{A}_p}(x)^p + \mu_{\tilde{A}_D}(x)^p)^{1/p}\right\}, p \geq 1 \quad (\text{Equation 6.4})$$

It should be noted that p (the number of indicators) must be equal or greater than 1. In this study, the number of indicators p=42. It is considered being very large. Therefore, the integrated result $\mu_{\tilde{A}}(x_i)$ was obtained from the union $\mu_{\tilde{A}_p}(x_i)$ and $\mu_{\tilde{A}_D}(x_i)$ based on Equation 6.4. The results of $\mu_{\tilde{A}}(x_i)$ are shown in Table 6.7 (the last column).

To identify the CCIs from Table 6-8, the λ -cut set approach is adopted. λ -cut set method can transfer a fuzzy set to a classical set. The most significant indicator is when $\lambda = 1$ while the worst outcome is $\lambda = 0$. When $\lambda = 0.5$, it means that the outcome is neither optimistic nor pessimistic. In this study, $\lambda=0.85$ criterion is adopted, which

is a commonly used threshold in the fuzzy set theory (e.g. Abunawass et al., 1998; Uysal and Yarman-Vural, 2003). In other words, considering a specific competitiveness indicator x_i , if the value $\mu_{\tilde{A}}(x_i)$ is equal or greater than 0.85, x_i is selected as CCIs. However, it can be found that the values $\mu_{\tilde{A}}(x_i)$ for most of the Competiveness indicators are greater than 0.85. According to this, the majority of the indicators selected in Chapter 5 are CCIs. Nevertheless, this is not in line with the principle of the model proposed in Chapter 5, which suggests that there is only limited number of competitiveness indicators as core indicators to guide real estate developers to survive at start-up stage. This can be explained as that new developers at start-up stage consider that all aspects (indicators) are equally important in order to survive. For example, Vanke invested resources equally to almost all aspects including human resources, technical capabilities, capital channels, land resources.

6.6 Identification of CCIs for real estate developers at growth stage

When a real estate developer moves ahead from their start-up stage, it then enters to the growth stage. According to the discussion in Chapter 4, real estate developers at growth stage expand their business in multi-regional developments and grow from small scale to large scale business operation. Therefore, it is more significant for developers to identify the CCIs at this stage and improve their competitiveness by focusing on the key areas.

The methodology to be used for identifying the CCIs in the growth stage will be similar to that used in the previous section where the CCIs for start-up stage are identified. The following sections will demonstrate how the CCIs for growth stage are found.

6.6.1 Preliminary analysis on the survey result

By using the survey data, statistical calculations on the relative significance of competitiveness indicators are conducted, and Table 6.8 summarizes the key calculation results. For example, X₁ represents the indicator “mature brand value and scale expansion resources”. The overall average score of significance of X₁ is 4.15 with standard deviation (SD) of 0.84. It is worthwhile to note that different response groups give different scores. For example, the developer group assigned the average score of X₁ with 4.40 and standard deviation of 0.815, but professional group gave average score to X₁ with 3.85 and standard deviation of 0.780.

Table 6.8 The significance score for indicators at growth stage

Group of factor	Indicator code	All (N=105)		Developers (N=58)		Academics (N=47)		
		Mean	SD	Mean	SD	Mean	SD	
Resources	X ₁	4.15	0.84	4.40	0.815	3.85	0.780	
	X ₂	4.12	0.77	4.38	0.671	3.81	0.770	
	X ₃	4.20	0.74	4.36	0.667	4.00	0.780	
	X ₄	3.80	0.78	3.78	0.817	3.83	0.732	
	X ₅	3.99	0.79	4.10	0.742	3.85	0.834	
	X ₆	3.73	0.78	3.71	0.838	3.77	0.698	
	X ₇	3.70	0.82	3.72	0.790	3.68	0.862	
	X ₈	3.82	0.79	3.91	0.864	3.70	0.689	
	X ₉	3.55	0.77	3.52	0.843	3.60	0.681	
	X ₁₀	3.65	0.72	3.66	0.739	3.64	0.705	
	X ₁₁	3.73	0.80	3.71	0.838	3.77	0.758	
	X ₁₂	3.64	0.75	3.64	0.788	3.64	0.705	
Mechanism	X ₁₃	3.33	0.79	3.38	0.791	3.28	0.800	
	X ₁₄	3.27	0.85	3.47	0.821	3.02	0.821	
	X ₁₅	3.70	0.78	3.66	0.828	3.77	0.729	
	X ₁₆	3.65	0.84	3.83	0.798	3.43	0.853	
	X ₁₇	3.55	0.77	3.50	0.682	3.62	0.874	
	X ₁₈	3.58	0.84	3.43	0.797	3.77	0.865	
	X ₁₉	3.64	0.80	3.45	0.799	3.87	0.741	
	X ₂₀	3.62	0.80	3.66	0.807	3.57	0.801	
	Capability	X ₂₁	4.04	0.71	4.07	0.769	4.00	0.626
		X ₂₂	3.72	0.78	3.83	0.819	3.60	0.712
X ₂₃		3.10	0.69	3.12	0.703	3.06	0.673	
X ₂₄		4.16	0.72	4.17	0.798	4.15	0.625	
X ₂₅		3.91	0.77	4.00	0.772	3.81	0.770	
X ₂₆		4.50	0.61	4.47	0.599	4.53	0.620	
X ₂₇		3.81	0.65	3.88	0.677	3.72	0.615	
X ₂₈		3.86	0.71	3.90	0.677	3.81	0.770	
X ₂₉		3.61	0.74	3.66	0.807	3.55	0.653	
X ₃₀		3.72	0.74	3.76	0.823	3.68	0.629	
X ₃₁		3.61	0.81	3.57	0.840	3.66	0.788	
X ₃₂		3.38	0.76	3.41	0.817	3.34	0.700	

X ₃₃	3.49	0.83	3.60	0.897	3.34	0.731
X ₃₄	3.94	0.82	4.03	0.591	4.26	0.706
X ₃₅	3.61	0.80	3.53	0.883	3.70	0.689
X ₃₆	3.76	0.77	3.90	0.742	3.60	0.771
X ₃₇	3.71	0.77	3.71	0.817	3.72	0.713
X ₃₈	3.84	0.83	3.84	0.875	3.83	0.789
X ₃₉	4.01	0.74	3.90	0.718	4.15	0.751
X ₄₀	3.74	0.65	3.81	0.576	3.66	0.731
X ₄₁	3.53	0.72	3.69	0.754	3.34	0.635
X ₄₂	3.94	0.70	4.03	0.674	3.83	0.732

The adequacy of the information in Table 6.8 depends on the reliability of the data collected through the questionnaire survey. It is considered necessary to ensure that the data used are reliable. Similar to the analogy adopted in previous section, Cronach's alpha coefficient is used to check the reliability of the classification of three groups of competitiveness indicators. The calculation results are shown in Table 6.9. It can be found that Cronbach's alpha coefficients for all indicators across the three groups are more than 0.7. Therefore, the data collected from the questionnaires survey is considered reliable.

Table 6.9 The Cronbach's alpha of data at growth stage

Resource factor group		Mechanism factor group		Capability factor group	
code	Alpha if deleted	code	Alpha if deleted	code	Alpha if deleted
X ₁	0.889	X ₁₃	0.884	X ₂₁	0.884
X ₂	0.887	X ₁₄	0.882	X ₂₂	0.882
X ₃	0.885	X ₁₅	0.883	X ₂₃	0.887
X ₄	0.885	X ₁₆	0.882	X ₂₄	0.885
X ₅	0.884	X ₁₇	0.885	X ₂₅	0.884
X ₆	0.884	X ₁₈	0.884	X ₂₆	0.887
X ₇	0.886	X ₁₉	0.883	X ₂₇	0.882
X ₈	0.885	X ₂₀	0.883	X ₂₈	0.884
X ₉	0.885			X ₂₉	0.885
X ₁₀	0.883			X ₃₀	0.882
X ₁₁	0.882			X ₃₁	0.885
X ₁₂	0.885			X ₃₂	0.884
				X ₃₃	0.882
				X ₃₄	0.887
				X ₃₅	0.884
				X ₃₆	0.884
				X ₃₇	0.885
				X ₃₈	0.887
				X ₃₉	0.886
				X ₄₀	0.885
				X ₄₁	0.885

Furthermore, the analysis of variance (ANOVA) was conducted to examine whether the opinions of the two groups of respondents are consistent for each of the CCIs. If a probability value p from ANOVA test below 0.05 is obtained, the groups can be considered independent. In this stage, there are 10 indicators whose p values are below 0.05. It suggests that the differences of opinions for the 10 indicators among the two groups (developers and academics) are significant. Therefore, the collected data samples from the two groups (developers and academics) should be considered separately in the growth stage.

6.6.2 Monte Carlo Simulation Result

Using the survey data collected from developers and academy groups, 100,000 simulations were conducted with reference to the indicator X₁. The simulation process took nearly two minutes on T8100 (Duo CPU)/2.1G PC computer. The simulated probability distributions of X₁ in the two groups are shown in Figure 6.7 and 6.8.

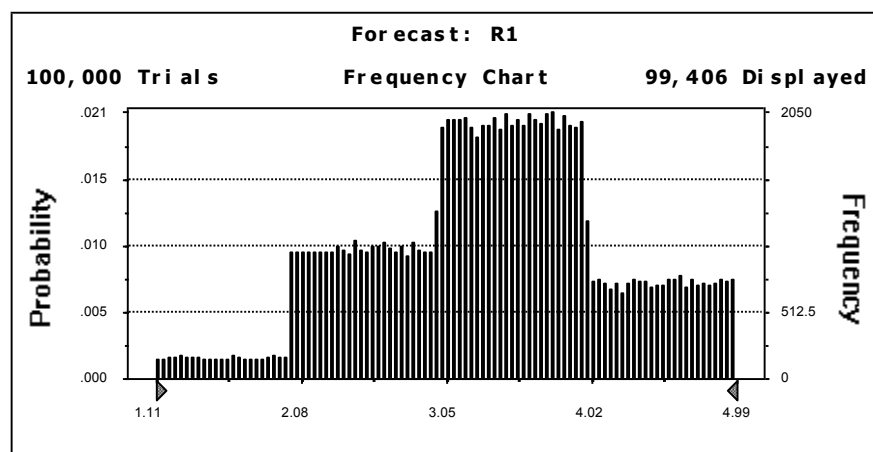


Figure 6.7 The probability distribution of X₁ from Academics by simulation at growth stage

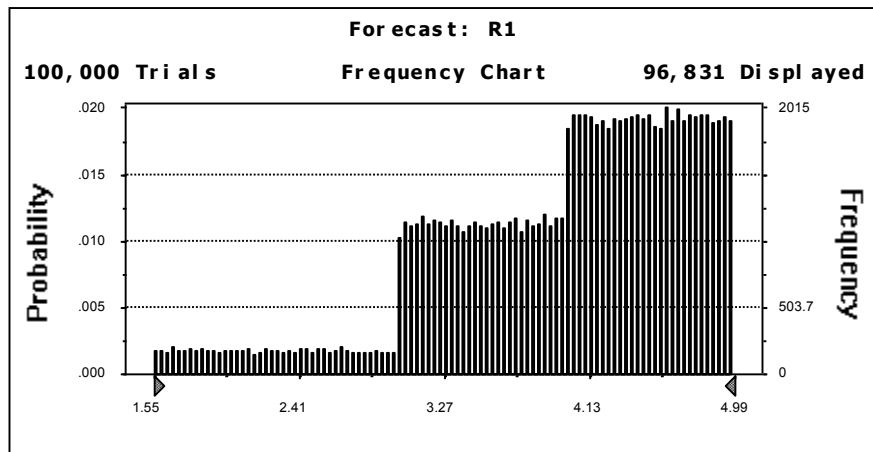


Figure 6.8 The probability distribution of X_1 from Developers by simulation at growth stage

Simulations have also been conducted for other indicators by following the same procedures as adopted for X_1 . The mean and standard deviation value of each indicator by using simulation results is shown in Table 6.10.

Table 6.10 The Mean and Standard Deviation value from Monte Carlo Simulation

Group of factor	Indicator code	All		Developers		Academics	
		Mean	SD	Mean	SD	Mean	SD
Resources	X_1	3.68	0.83	3.91	0.86	3.35	0.82
	X_2	3.62	0.81	3.83	0.84	3.31	0.82
	X_3	3.7	0.79	3.81	0.84	3.5	0.82
	X_4	3.3	0.83	3.27	0.86	3.15	1.03
	X_5	3.49	0.84	3.61	0.79	3.35	0.87
	X_6	3.23	0.82	3.2	0.88	3.27	0.75
	X_7	3.2	0.87	3.22	0.84	3.18	0.9
	X_8	3.32	0.84	3.42	0.91	3.2	0.74
	X_9	3.06	0.82	3.02	0.88	2.9	0.98
	X_{10}	3.15	0.78	3.16	0.79	3.14	0.75
	X_{11}	3.23	0.85	3.21	0.88	3.27	0.8
	X_{12}	3.13	0.8	3.14	0.83	3.14	0.76
Mechanism	X_{13}	2.83	0.84	2.88	0.83	2.78	0.84
	X_{14}	2.77	0.89	2.96	0.86	2.52	0.86
	X_{15}	3.2	0.83	3.15	0.87	3.27	0.78
	X_{16}	3.15	0.89	3.33	0.84	2.93	0.89
	X_{17}	3.05	0.82	3	0.74	3.12	0.91
	X_{18}	3.11	0.85	2.98	0.78	3.27	0.9
	X_{19}	3.14	0.85	2.95	0.84	3.37	0.79
	X_{20}	3.11	0.85	3.16	0.85	3.07	0.84
Capability	X_{21}	3.54	0.76	3.57	0.81	3.4	0.86
	X_{22}	3.22	0.83	3.33	0.86	3.1	0.76
	X_{23}	2.6	0.74	2.62	0.76	2.56	0.72
	X_{24}	3.66	0.77	3.67	0.84	3.59	0.82
	X_{25}	3.41	0.83	3.5	0.82	3.1	1.07
	X_{26}	3.97	0.75	3.94	0.73	4	0.77
	X_{27}	3.14	0.95	3.23	0.96	3.05	0.93
	X_{28}	3.36	0.76	3.26	0.94	3.31	0.81
	X_{29}	3.11	0.79	3.15	0.85	3.05	0.71
	X_{30}	3.22	0.79	3.26	0.86	3.18	0.69

X ₃₁	3.11	0.86	3.07	0.89	3.16	0.83
X ₃₂	2.88	0.81	2.92	0.86	2.84	0.75
X ₃₃	2.99	0.88	3.1	0.93	2.84	0.78
X ₃₄	3.44	0.87	3.19	0.86	3.76	0.75
X ₃₅	3.11	0.85	3.04	0.92	3.21	0.74
X ₃₆	3.26	0.81	3.4	0.79	3.1	0.82
X ₃₇	3.21	0.82	3.21	0.86	3.22	0.76
X ₃₈	3.34	0.88	3.34	0.92	3.33	0.83
X ₃₉	3.51	0.79	3.4	0.77	3.54	0.99
X ₄₀	3.24	0.71	3.17	0.87	3.16	0.78
X ₄₁	3.03	0.78	3.2	0.8	2.84	0.69
X ₄₂	3.45	0.76	3.54	0.73	3.33	0.78

6.6.3 Fuzzy set approach: the final identification of CCIs at growth stage

The data in Table 6.10 is generated from a simulation by using questionnaire survey data. Similar rationale to that described in the previous section, Fuzzy set theory is applied to assist in identifying the CCIs. The calculation results by using Equation 6.2 are presented in Table 6.11. In order to identify whether or not an indicator is a CCI, a benchmark value should be preset, in other words, $\mu_{\tilde{A}}(x_i)$ should meet a certain given value (λ). Then the indicator x_i will be considered as a core competitiveness indicator. As the survey data come from two groups of experts, namely, academics and developers, different groups will result in different CCI fuzzy sets, represented by \tilde{A}_P and \tilde{A}_D respectively. According to Equation 6.2 and data in Table 6-11, the degree of membership $\mu_{\tilde{A}}(x_i)$ can be calculated. The results $\mu_{\tilde{A}_P}(x_i)$ and $\mu_{\tilde{A}_D}(x_i)$ are shown as Table 6.11.

Table 6.11 The degree of membership of indicators for CCIs at growth stage

Indicator	Developers	Academics	Integrated
	$\mu_{\tilde{A}_D}$	$\mu_{\tilde{A}_P}$	$\mu_{\tilde{A}}$
X ₁	0.896	0.700	0.896*
X ₂	0.898	0.682	0.898*
X ₃	0.897	0.743	0.897*
X ₄	0.674	0.638	0.675
X ₅	0.845	0.662	0.845
X ₆	0.601	0.659	0.659
X ₇	0.619	0.595	0.622
X ₈	0.690	0.615	0.690

X ₉	0.465	0.544	0.544
X ₁₀	0.638	0.598	0.639
X ₁₁	0.637	0.660	0.663
X ₁₂	0.586	0.594	0.601
X ₁₃	0.464	0.362	0.464
X ₁₄	0.534	0.299	0.534
X ₁₅	0.603	0.680	0.680
X ₁₆	0.691	0.490	0.691
X ₁₇	0.502	0.532	0.533
X ₁₈	0.511	0.659	0.659
X ₁₉	0.431	0.703	0.703
X ₂₀	0.554	0.553	0.563
X ₂₁	0.776	0.808	0.812
X ₂₂	0.672	0.553	0.672
X ₂₃	0.173	0.213	0.213
X ₂₄	0.792	0.875	0.875*
X ₂₅	0.739	0.595	0.739
X ₂₆	0.949	0.936	0.959*
X ₂₇	0.708	0.641	0.708
X ₂₈	0.726	0.638	0.726
X ₂₉	0.587	0.511	0.587
X ₃₀	0.554	0.680	0.680
X ₃₁	0.519	0.594	0.594
X ₃₂	0.451	0.425	0.452
X ₃₃	0.536	0.405	0.536
X ₃₄	0.671	0.895	0.895*
X ₃₅	0.518	0.620	0.620
X ₃₆	0.709	0.554	0.709
X ₃₇	0.553	0.617	0.617
X ₃₈	0.603	0.638	0.639
X ₃₉	0.724	0.786	0.787
X ₄₀	0.723	0.640	0.724
X ₄₁	0.590	0.384	0.590
X ₄₂	0.830	0.680	0.830

**Note: The degree of membership is more than 0.85.*

The integrated result $\mu_{\tilde{A}}(x_i)$ was obtained from the union $\mu_{\tilde{A}_p}(x_i)$ and $\mu_{\tilde{A}_b}(x_i)$ based on Equation 6.4. The results of $\mu_{\tilde{A}}(x_i)$ are shown in Table 6.11 (the last column).

To identify the CCIs from Table 6.11, the λ -cut set approach is adopted, which has been described in the previous section. Accordingly, the CCIs selected are as follows:

- X₂-Annual land reserves;
- X₁- Corporate brand reputation;
- X₃- Access to a diverse range of capital;

- X₂₄-Entrepreneurship (e.g. top leaders with resolute determination and quick response to tell new market opportunity, superior strategic management capacity);
- X₂₆- Risk management capability (response to policy and system changes);
- X₃₄- Development of green strategy to gain social responsibility

6.7 Discussion: Development of core competitiveness indicators

The data in Table 6.7 and Table 6.11 demonstrate the results of CCIs for real estate developers at start-up and growth stages respectively. These results can be illustrated in Figure 6.9. From the figure, it can be seen that CCIs at the two different development stages are different. There are 30 CCIs during start-up stage, whilst there are only 6 CCIs during growth stage. This demonstrates that developers have gone through a learning-curve by which they become more focusing when they become more mature. At the start-up stage, they are more careful thus invest resources on almost all aspect, evidenced by that they consider almost all indicators important. This also indicates that developers at start-up stage do not have knowledge and experience on which aspects are more important than others. However, when they enter into mature stage or growth stage, they realize that resources must be invested on these truly important areas, thus they identified only 6 indicators or areas as key areas. This further shows that developers' learning process on their competitiveness is a dynamic process. This supports the principles of the proposed model in Chapter 5, suggesting that the key competitiveness to developers is changeable and dynamic.

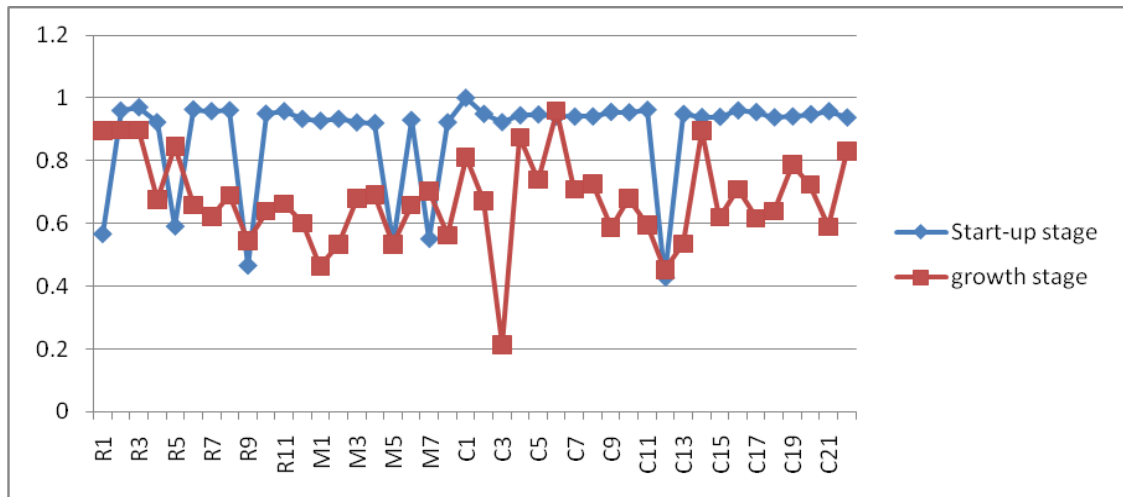


Figure 6.9 The difference between the distribution of CCIs at the start-up stage and growth stage

Table 6.12 The comparison on CCIs at two development stages

Indicator	Start-up stage	Growth stage	Both stages
Corporate brand reputation(X_1)		☆	
Annual land reserves(X_2)	△	☆	☺
Access to a diverse range of capital (X_3)	△	☆	☺
Availability of consumer resources (X_4)	△		
Availability of rich human resources (X_5)			
Availability of information channels (X_6)	△		
Availability of media resources (X_7)	△		
Relationship resources with government (X_8)	△		
Organizational culture resources (X_9)			
Knowledge of market information channels (X_{10})	△		
Expertise talents resources in real estate industry (X_{11})	△		
Availability of strategic alliances resources (X_{12})	△		
Effective corporate ownership (X_{13})	△		
Innovation and reform mechanism on organizational structure (X_{14})	△		
Isolating mechanism (X_{15})	△		
Availability of mature decision-making mechanism (X_{16})	△		
Appropriate incentive mechanism (X_{17})			
Internal surveillance and reward mechanisms on senior managers (X_{18})	△		
Horizontal cooperative mechanisms with related partners (X_{19})			
Autonomous and flexible market-oriented operation mechanism (X_{20})	△		
Capability to expand finance channels and to manage cash liquidity (X_{21})	△		
Marketing orientation capability at initial stage (X_{22})	△		
Investment decision-making capability (X_{23})	△		
Entrepreneurship (X_{24})	△	☆	☺
Scientific capital management capabilities (X_{25})	△		
Risk management capability (response to policy and system changes) (X_{26})	△	☆	☺
Good team collaboration capability (X_{27})	△		
Marketing schedule control capability (X_{28})	△		

Housing product innovation capability (e.g. features or designs) (X ₂₉)	△		
Marketing-oriented R&D Capability (grasp the latest consuming trend and market trend) (X ₃₀)	△		
Information technological capability (X ₃₁)	△		
Customer relationship management capability (X ₃₂)			
Organizational Capability (X ₃₃)	△		
Development of green strategy to gain social responsibility (X ₃₄)	△	☆	☺
Learning capability (X ₃₅)	△		
Land purchase price negotiation Capability (e.g., success rate of land bidding) (X ₃₆)	△		
Value chain integration capability (X ₃₇)	△		
The capability to get permit of developing real estate projects approved by government (X ₃₈)	△		
Quality control and planning capability (X ₃₉)	△		
Corporate business process management capability (X ₄₀)	△		
Inter-departmental coordination capacity (X ₄₁)	△		
Production cost planning and control capabilities (X ₄₂)	△		

(In the Table 6.12, “△” denotes CCIs at start-up stage; “☆” denotes CCIs at growth stage; “☺” denotes CCIs at both development stages.)

From the table, it can be seen that there are 30 CCIs identified in the start-up stage, 6 in growth stage, and there are 5 CCIs which appeared at both stages.

CCIs identified at start-up stage

In the start-up stage, there are 30 CCIs, as shown in Table 6.12. The reason for many CCIs in the start-up stage can be explained that real estate developers consider that they can only survive if they pay attention on all related aspects. Usually, Real estate firm is keen to find any opportunities in the start-up stage. Leaders in real estate companies have to deal with many difficulties and problems when their business just starts. This is particularly true in the Chinese real estate market where any start-up business must rely on good resources, strengths and relations across all aspects. This is echoed with the discussions on stakeholders’ relations in Chapter 4, pointing out that relationships are essential for developing real estate businesses. Furthermore, “Core competitiveness indicator” concept is usually cultivated gradually in the start-up stage to developers who may deal with not only real estate business but also other types of businesses. For example, the discussion with Vanke managers revealed

that their business has invested to all round business activities including electronic, supermarket, foreign trade and others during its start-up stage for developing its real estate business. In grasping every business opportunities and dealing with these multi-types of businesses, Vanke have to rely on various financial channels, human resources, governmental relations, customer relations and many others, thus the business consider CCIs across many dimensions.

CCIs identified at growth stage

Up to growth stage, real estate developers have accumulated experience and learned a lot about how to compete in the market. Thus they have better knowledge and judgment at this stage about which are more important aspects they should invest resources on. The analysis results suggest that the CCIs at growth stage mainly come from the two groups, namely resources-related indicators and capabilities-related indicators. Mechanism-related indicators are not considered as significant as the other two groups of indicators. This can be considered due to the fact that the real estate firms in China have only experienced about 20 years' operation, their organizational mechanism is not mature thus has not yet be considered as core competitiveness indicators. Resources and capability play key role in exhibiting business competitiveness in the growth stage. Accordingly six CCIs are identified for the growth stage. Among them, one of these indicators, 'Corporate brand reputation(X_1)' is considered a special indicator for real estate developers as it was not identified in the start-up stage. The Chinese businesses used to not pay attention to their brand and reputation in their business start-up stage. Byrd (1992) opined that Chinese firms are reluctant to enhance their product reputation and establish their own brand names as such tradition was cultivated in the past under the state-planned economy because

their products would be sold according to the plan. Under the old planned economy system in China, construction-related activities were treated as public services rather than business. Housing was centrally planned and allocated with free of charge to citizens, called welfare housing system (Yu, 2006). However, after about 20 years' development, many developers have entered into growth stage. They become gradually aware of the importance of brand names to a company's competitive advantage. The above analysis indicates that brand and reputation has become an invisible but essential indicator to help real estate developers to understand their competitiveness. Good brand and reputation can help build up a business' credibility. High credibility can increase developers' opportunities to win land and consumers. This analogy is consistent with the principles of resource-based-view (RBV) and core competence approaches which emphasize the importance of organizational brand and reputation (i.e. Dunning, 1988; Dierickx and Cool, 1989; Douma and Schreuder, 1998; Rangone, 1999).

CCIs identified for both stages

The above discussion suggests that developers at the growth stage have cultivated their core competitiveness after the learning period in the start-up stage. The CCIs at growth stage therefore converge and are more focused for the developers' fast growth. It is interesting to find out that there are 5 CCIs in common in both stages. They are 'annual land reserves (X_2)', 'access to a diverse range of capital' (X_3), 'risk management capability (response to policy and system changes)' (X_{26}) and 'development of green strategy to gain social responsibility' (X_{34}). These five CCIs can be divided into two groups of indicators in terms of their significance in helping developers gain competitiveness in the market: traditional and advanced lists of CCIs.

Traditional CCIs: Land, capital and entrepreneurship

These three CCIs traditionally considered critical for developers to grasp competitiveness in the market. In traditional contexts, land, capital and entrepreneurship are considered very important in the start-up and growth stages. This is due to the special characteristics of real estate developers as discussed in Chapter 4. The success of real estate business has to rely on sufficient land reserves, capital resources and the strong capability of entrepreneurs. The following sections will address each of these CCIs separately from the perspective of their significance.

The indicator X_2 is identified as the most significant one in this group. Proper annual land reserve plan is the key to building up competitiveness for a real estate developer. This is due to multiple reasons. First, land resources are the basic element for real estate development. Developers will not have business without land. As the land is non-renewable resources, new land resources for real estate development becomes less and less, whilst developers always seek for more and more land in order to guarantee their sustainable development. Therefore, land reserve or banking strategy belong to developers' long term development strategies in order to compete effectively in the real estate market. Secondly, the traditional land allocation mode which relies largely on the developers' relationship with government (*Guanxi*) has been changed. In the new practice, developers have to bid for land resources through more transparent and fair procedures. Thus developers need to boost land reserves by appropriate land bidding and auction strategy. In this context, the annual land reserve is important in building up competitiveness in the market.

Furthermore, annual land reserve is the critical criteria for companies to be listed. In China, more and more enterprises have entered real estate market because of attractive

profits and low entry barriers. In line with the implementation of government policy of tighter monetary and land supply, increasing number of real estate enterprises have been merged in various forms. This will lead to the increase of concentration degree in the market. Those firms with weak financial support consider being listed as an alternative strategy for development. Thus land reserve, one of the most important indicators to be listed, is identified as significant competitiveness indicator (Tian and Zeng, 2008). In fact, more and more real estate firms in the Chinese real estate market have boosted their annual land reserves, which can be evidenced by the data in Table 6.13.

Table 6.13 The annual land reserve for listed real estate enterprises

Real estate developer	Land reserve (10,000 m ²)	Development life span (year)	Land reserve/sold area in 2007
China Vanke	2163	2.8	3.5
Poly Real Estate Group	1212	3.4	6.1
Country Garden Holdings	4331	4.4	16.6
R&F Properties	2620	4.8	18.6
Gemdale Properties	1000	5.0	9.2

Data source: summarized from the annual yearbook of the listed real estate companies

The competitiveness indicator X₃, concerning an organization's financial channels, is identified as another CCI. Real estate is a capital-intensive industry characterized by high-risk, high input and high return. The availability of abundant funds is critical a real estate organization particularly at both of the two development stages. In the analysis, the availability of financial channels is regarded as a CCI for real estate organizations. The funds needed for the development of a real estate project are in large scale mainly for land acquisition and construction, particularly in the growth stage. When real estate developers start their expansion beyond the local market, a large amount of capital is required to acquire land at different regions. Once the real estate project was started, it is obvious that they cannot get accomplished as a result of

the lack of capital. Therefore, real estate developers have to approach various financing channels to secure sufficient finance for operating business activities. According to the Real Estate Financial Report (2004), the development funds in Chinese real estate market are from three main sources: 35% from the funds owned by the developers; 18.4% from the loans of the banks and 43.1% from proceeds collected from the presales. According to the Circular of the State Council of the PRC, on “Adjusting the Capital Ratios of Fixed Asset Investment Projects in real estate Industry” (State Council of PRC, 2004), the capital ratio of fixed asset investment was raised to 35%, which greatly increased the difficulty of project financing for real estate developers in China. In this context, it is essential for developers to seek for expanding financial channels through various new approaches in order to keep competitive in the market, such as being listed in the stock market, real estate investment trusts and private equity fund in the financial market. For example, Vanke’s powerful capital operation capability has helped survive in their start-up stage and achieve fast growth in size and scale. With their scale advantages, Vanke can not only buy large areas of land but also complete their projects and deliver in due time. For example, by relying on their capital capability, it was revealed that they bought a total of 1.31 million m² land area in the Pearl River Delta region in the first half year of 2006 (Vanke Annual Report, 2007). Consequently, its substantial capital capabilities have provided it with a good funding platform for sustainable real estate development.

Another significant CCI is ‘entrepreneurship’ (e.g. top leaders with resolute determination and quick response to tell new market opportunity, superior strategic management capacity). The definition of entrepreneurship has been described in a variety of literatures. Schumpeter (1911), for example, defined entrepreneurship as

“the assumption of risk and responsibility in designing and implementing a business strategy or starting a business”. Gough (1969) stated that entrepreneurship “refers to a person who undertakes and operates a new organization or venture, and assumes some accountability for the inherent risks”. Entrepreneurship is not only confined to the manufacturing sector, but also operates in tertiary fields such as retailing, transport, finance and real estate business (Chau, 1993). Also, Smith (1967) concludes that the more opportunistic the entrepreneur and the more adaptive the organization, the greater the likelihood that the entrepreneur will take an organization through its inception stage. Baumol (1988) further opined that entrepreneurship is not imitative. This is echoed in the result of fuzzy analysis in this study, where entrepreneurship is ranked as one of the most important CCIs. When a real estate developer initially enters the market, large amounts of capital funds need to be invested in the purchase of land. Thus, entrepreneurs need to have the competence to make proper judgments when they consider buying land. The capability of the entrepreneur is particularly important for real estate businesses as many problems and uncertainties exist in a rapidly changing environment in China.

An example of this is Wangshi, the head of China Vanke, is the most famous pioneering real estate entrepreneur in China. He has played a critical role in China Vanke’s development. In the early 1989, Wangshi and his team introduced revolutionary reforms in the China Vanke’s history by overseeing a shareholding system transformation. This reform helped China Vanke raise 2,800 million yuan. By 1991, China Vanke was officially listed on the Shenzhen Stock Exchange (code: 0002). These two strategic decisions made by the entrepreneur Wangshi were regarded as the most significant events in China Vanke’s history. For example, before 1992, China Vanke was a multi-disciplinary business organisation, involving

international trade, retail, mechanical, electronics and printing. Having analyzed its attractiveness and competitiveness among all its businesses, Wangshi and his managerial team chose the real estate industry as its major long-term development business. By the end of 1990s, they further decided to focus on commodity housing for the middle class as its sole business segment. These actions helped the organization establish a leading role in the China real estate industry (Mao, 2007). In order to enhance its market competitive advantage further, Wangshi and his team introduced the ‘Professional Managers System’ in early 2000s. This new management system led to another new leading development stage for China Vanke (Decision Resources Real Estate Research Center, 2008). All these demonstrate the importance of entrepreneur to a real estate developer during the two development stages.

Advanced CCIs: Green strategy and risk management capability

In line with the promotion of sustainable development, businesses have started to realize the importance of their green performance to their competitiveness. On the other hand, the higher frequency of market turbulence in real estate field has stimulated businesses’ attention on risk management, thus risk management skill is considered essential to indicate a business’ competitiveness. This is proven from the survey in this study that ‘Green strategy’ and ‘risk management capability’ are identified as CCIs in both stages. It can be noted from Table 6.12 that the indicator ‘risk management capability’ (X_{26}) is one of the most important indicators. Risk is widely quoted as an uncertain event, if it happens it will cause losses (Flanagan and Norman, 1993; Lifson and Shaifer, 1982; Shen, 1997; Shen, 1999; Adair and Hutchison, 2005). A variety of risks may occur during the development process when the external environment changes (e.g. financial crisis), which can cause losses to the real estate developers. However, these losses can be reduced or even retrieved if

sensitive risk prediction, assessment and response strategy are adopted. For example, in the period of financial crisis, China Vanke promptly adjusted its strategy to deal with market risks. The first action taken by Vanke is to increase the proportion of medium and small-family (90 m² accounting for more than 40% of the total). In the meantime, Vanke implemented actively price reductions in order to withdraw funds quickly. Furthermore, Vanke also engaged cooperation with other well-known household appliances business to share risks with other stakeholders. Consequently, China Vanke has increased its market share in the context of financial crisis by adopting appropriate risk strategy.

Similarly, green strategy has become very important when the environmental awareness and demand for energy efficiency are highly promoted particularly in these developing countries such as China. In order to gain competitive advantage by practicing green strategy, many real estate developers in China are working to develop green properties and feed the growing demand among buyers. There is a huge potential for green demand as people start to seek for healthier living and working environments. However, in the start-up stage, critics are received that “green” development by some developers is superficial (Feng, 2009). Some developers take advantage of using the concept of “green property development” to make profits, which make them become well-known for their “green” brand. Nevertheless, there are a number of real estate developers, particularly these large developers such as China Vanke, China Merchants Property and Green town Property who have been actively promoting the green property development when they become mature at growth stage. In their growth stage, whilst they have various strategies for gaining competitiveness, they realized the competitiveness that can be gained from committing social responsibility through bearing sustainable loads of the whole society. According to

the study by Wang (2010), competitive advantage can be built though the incremental costs for the construction of green buildings occur at the level between 5 to 15 percent to the original estimate.

In the future chapters, analysis will be given to demonstrate the competitiveness gaining by practicing these two advanced CCIs, namely, green strategy and risk management.

6.8 Summary

There is a need for a set of Core Competitiveness indicators to assess properly the competitiveness of real estate developers. The proposed alternative framework discussed in Chapter 5 is examined by using the questionnaire survey data in this chapter. In comparing to the traditional approach for analyzing questionnaire survey data, this study provides an alternative method of using questionnaire data for identifying CCIs, and this alternative is the combination of Monte Carlo Simulation technique and Fuzzy Set theory. The use of Monte Carlo Simulation and Fuzzy Set theory interactively helps mitigating the impacts of individual respondents' subjectivity and fuzziness involved during survey. The finding indicates that the understanding on the concept of 'core competitiveness' develops from start-up stage to growth stage, which demonstrate that the dynamic characteristic of the concept 'competitiveness' for real estate developers.

The findings on CCIs also indicate that real estate developers should focus particularly on mature brand reputation, availability of capital channel resources, appropriate annual land reserve, excellent entrepreneurship, sensitive risk prediction, assessment and response capacity and development of green corporate brand as well as green strategy.

The application of CCIs can help developers in the Chinese market focus their resources and efforts on improving competitiveness in these core areas. This will, in turn, provide a basis for taking appropriate actions to compete effectively in the real estate market. Furthermore, organizations that are intend to enter the real estate market can conduct self-evaluation by using CCIs to identify their strength and weakness, thus take proper strategy for engaging business. The CCIs identified in this research help fill the knowledge gap in understanding organizational competitiveness in the Chinese real estate market.

**CHAPTER 7 GREEN STRATEGIES
FOR GAINING COMPETITIVENESS
FOR REAL ESTATE DEVELOPERS**

CHAPTER 7 GREEN STRATEGIES FOR GAINING COMPETITIVENESS FOR REAL ESTATE DEVELOPERS

This chapter presents one of the key strategies for competitiveness improvement, namely, green development in the Chinese real estate market. The study will investigate how the green strategies contribute to the competitiveness of developers.

- *7.1 Introduction*
- *7.2 Green elements for real estate development*
- *7.3 Data survey*
- *7.4 Analysis on survey results*
- *7.5 Case studies*
- *7.6 Discussion*
- *7.7 Summary*

CHAPTER 7 GREEN STRATEGIES FOR GAINING COMPETITIVENESS FOR REAL ESTATE DEVELOPERS

7.1 Introduction

The analysis in Chapter 6 suggests that green development is an important competitiveness indicator for assessing the competitiveness of real estate developers. This Chapter will investigate how the green strategy helps developers to gain competitiveness.

The promotion of green strategy in real estate development has significant contribution to the implementation of sustainable development principles, which works for the balance between economical, social and environmental performance. Why do the real estate developers go for green? Can green strategy help real estate developers gain competitiveness? This chapter examines both competitiveness and barriers in applying green strategies in the process of real estate development. The examination is conducted from the whole process of developing a real estate project, including project plan and design, construction, and operation and management stages. It is considered that the application of certain types of green strategies can contribute to building up developers' competitive advantages. The application of these typical strategies will be discussed through four constructive case studies.

The promotion of sustainable practice in real estate development has resulted in the development of various green strategies especially for improving environmental performance in the process of housing development. In order to promote the sustainable development mission, there are various regulatory strategies which have

been widely discussed (Li and Yao, 2009; Jiang and Tovey, 2009; Waters *et al.*, 2007), and they can be highlighted as follows:

- State intervention, green development policies and their implications
- Strategies to create awareness with regards to green buildings and use of green systems and technologies in the real estate sector
- Strategies to reduce municipal service fees and costs for green real estate development
- Community engagement and stakeholder involvement during and before the real estate design stage
- Proactive strategy to conduct education and training programs for green real estate development
- Exploring use of green measures to compensate any loss of bio-diversity, environmental deterioration and degradation due to real estate development

Nevertheless, these regulatory strategies will only be effective if real estate developers participate by conducting green development in practice. On the other hand, developers will only actively participate in promoting these green practices if they find that these practices can help them gain competitiveness in the market. It is therefore important to help developers understand whether or to what extent the green development strategies can be of helpful to their competitiveness gaining.

Existing studies have addressed extensively the importance of green strategy and environmental performance by real estate developers (for example, Shen *et al.*, 2010; Water *et al.*, 2007; Eichholtz *et al.*, 2009). The term “green strategy” is considered in this study as the approach that developers adopt to improve and gain sustainable competitive advantage not only for improving business performance but also for

contributing to environment protection, ecological responsiveness and social responsibility. Green strategy is an important means to implement sustainable development principles in the built environment including real estate development. Previous study suggests that green features in the building practice provide a cost-effective choice for real estate developers and policymakers looking to reduce the negative environmental effects of development (Kingsley, 2008). A wide range of green features, such as green roof technology (GRHCC, 2003a), solar system (Ecotecture, 2006) and HVAC system (UNEP, 2003) were introduced in previous studies for application. These strategies aim for various purposes include better building sustainability performance, lower operational costs, protecting the health of building residents, and energy saving. Governments world-wide have also been introducing various policies and regulations to promote the green development for infrastructure and building projects. For example, Hong Kong Buildings Department promulgated a Comprehensive Environmental Performance Assessment Scheme for Buildings. The Scheme introduces a green building labeling system and gives recognition to buildings with good environmental performance in planning, design, construction and management (Hong Kong Development Bureau, 2007). Such recognition helps the contributing developers to gain advantages by having better market sales (Polaris, 2005).

This chapter will present green-elements applicable in the process of developing real estate projects by presenting a green strategy application profile. This profile demonstrates procedures for real estate developers to select green technologies and mitigate the barriers encountered across various stages in the process of real estate project development. The discussion will be given on the competitiveness that real estate developers can gain by employing green elements.

The following sections will be covered in this chapter: Firstly, discussion will be given on various green technologies and practices for improving competitiveness by adopting green strategy. Secondly, data from survey for analyzing the green strategies will be presented. Thirdly, four case studies for further analyzing the competitiveness-gaining from green strategies will be presented.

7.2 Green elements for real estate development

Previous studies have addressed various green development technologies in developing real estate projects. For example, the study by Nelms *et al.* (2005) promotes green roof system as effective means to reduce energy consumption in operating buildings. The green roof system can make contribution to sustainable practice in various ways, for example, the system can help lower the temperature inside buildings, thus reduce the time of using air-conditioning system. Doherty *et al.* (2004) revealed that ground source heat pump technology has been adopted in the Eco House in UK, which can help save energy. Other researchers, communities, and organizations have been introducing various lists of indicators for highlighting green building characteristics. For example, a number of cities and towns across the United States have developed green guidelines tailored to their needs (Sparks, 2007). These green guidelines for good building performance include Energy Star, the Green Home Building Guidelines by National Association of Home Builders, , and Leadership in Energy and Environmental Design (LEED) (Sparks, 2007). However, the effectiveness of adopting green strategy in developing real estate projects is debatable. Bradshaw *et al.* (2005) opined that real estate developers were reluctant to practice green systems as they consider that these systems would cause extra costs or include more risks in using these new systems.

There are experiences of improving real estate developer's competitiveness through adopting green strategy. For example, Hong Kong private sector housing developers such as Swire Properties, Sun Hung Kai, Hong Kong Land, and Henderson Land have adopted the building environmental assessment management system (HK-BEAM). In using HK-BEAM, the green features on building design, construction and management are assessed. It was reported that, up to 2009, there are about 170 landmark real estate projects in Hong Kong, which obtained the recognition for improved environmental performance under BEAM system. These projects comprise of over 7.2 million m² of office space and 36,000 m² residential units (Australia Government Trade net, 2009). For another example, the study by the Korea Institute of Construction Technology (KICT) (2000) demonstrates that green development is one of the most important marketing strategies for Korean real estate firms. In Korean real estate market, developers implemented green marketing strategy for improving brand image particularly by focusing on outdoor landscape design. Outdoor landscape is considered as a theme garden and an environmental sculpture, and it offers visual attractiveness (KICT, 2000; Lee *et al.*, 2007). In the United States, it was reported that developers adopted widely green building programs in order to promote their environmental friendly image (US Green Building Council (USGBC) 2007). The report by Nie (2007) demonstrates that since 2002 China has launched the scheme "Green Eco-housing Sample Projects" to promote green real estate throughout the country. Until 2007, 23 eco-housing sample projects were established in 20 cities across 14 provinces in China. These sample projects have embodied various green features such as solar energy application and prefabrication concrete technology. These projects achieved an average of 58.1% energy saving target and an average of 21.6% water saving (Nie, 2007).

There is a great potential of contributing to sustainable development by engaging green strategy in real estate development. This is particularly true in developing countries where huge plans for real estate are to be implemented. For example, China is engaging the enormous construction booming. According to National Bureau of Statistics of China (NBS, 2009), RMB2391.8bn were invested in housing industry in China in the first 10 months of 2008, increased by 24.6% from previous year. The completed building area for housing has been increasing annually by 9.1% during the period of 2000-2008.

In line with these developments on green technologies for real estate development, various green elements are introduced in the previous studies (Glicksman *et al.*; 2001; Parke, 2004; U.S Department of Energy, 2009). These green elements in real estate development are summarized in Table 7.1.

Table 7.1 Typical green elements/ technologies/ systems in housing development

Code	Green elements	Key references
GE ₁	Considering environmental impact when selecting project site	United Nation Environment Programme, 2005
GE ₂	Design for better microclimate and environmentally responsible housing	United Nation Environment Programme, 2005
GE ₃	Optimizing building orientation and configuration for better energy performance in design stage	Glicksm an et al.,2001
GE ₄	Application of underground space development technology to save land resources	Parke, 2004
GE ₅	Green landscape design and use of wetland landscape technology	Pei <i>et al.</i> ,2009
GE ₆	Application of green roof technology	GRHCC, 2003a
GE ₇	Application of solar system technology	Ecotecture, 2006
GE ₈	Application of efficient equipment and appliances for natural ventilation	U.S Department of Energy, 2009
GE ₉	Use of environmental friendly materials for HVAC systems	UNEP, 2003
GE ₁₀	Optimizing building envelope thermal performance	U.S Department of Energy, 2009
GE ₁₁	Integrative use of natural lighting with electric lighting system	HK Green building technology net,2009
GE ₁₂	Ample ventilation for pollutant and thermal control	U.S Department of Energy, 2009
GE ₁₃	Application of waste management technology	Vanegas et al., 1995
GE ₁₄	Application of minimizing the disruption to living environment technology	UNEP, 2003
GE ₁₅	Application of Low E insulation window technology	Kirby and Williams, 1991
GE ₁₆	Application of decentralized rainwater technology	Partzsch., 2009

GE ₁₇	Application of ground source heat pump technology	Doherty et al., 2004
GE ₁₈	Application of gray water systems	Chen et al., 2005
GE ₁₉	Application of prefabricated concrete technology	Tam, 2009; Noguchi, 2003
GE ₂₀	Application of green technology monitor and maintenance system	U.S Department of Energy (2009)
GE ₂₁	System for green facility management	Nousiainen and Junnila, 2008

7.3 Data survey

The research data for analysis in this Chapter was searched and collected using a combination of literature review, questionnaires survey, and case-studies. Literature review is conducted to understand the green elements and barriers of using green elements addressed in the literature. The 21 green elements have been presented in Table 7.1 in the previous section. The barriers in applying green elements in real estate business have been addressed in various previous studies (Tagaza and Wilson, 2004; Williams and Dair, 2007; The Energy and Resources Institute, 2006), and these typical barriers are highlighted Table 7.2.

Table 7.2 Summary of typical barriers for applying green elements in housing projects

Code	Barriers	Key references
BX ₁	Higher costs for green appliance design and energy-saving material	Williams and Dair, 2007; Tagaza and, Wilson, 2004
BX ₂	Insufficient policy implementation efforts	Osmani, and Reilly, 2002
BX ₃	Technical difficulty during the construction process	Tagaza and, Wilson, 2004
BX ₄	Risks involved because of different contact forms of project delivery and changed site practices and behaviours	Tagaza and, Wilson, 2004
BX ₅	Lengthy planning and approval process for new green technologies and recycled materials	Tagaza and, Wilson, 2004
BX ₆	Lack of knowledge and awareness to the green technologies	The Energy and Resources Institute, 2006
BX ₇	Lack of efficiency for implementing green building regulations and byelaws	The Energy and Resources Institute, 2006
BX ₈	Higher cost in relation to customers demand	Osmani, and Reilly, 2002
BX ₉	Unfamiliarity with green technologies resulting in delays in the design and construction process	Eisenberg et al., 2002; Tagaza and, Wilson, 2004
BX ₁₀	Interests conflicts between various stakeholders in using green measures	Williams and Dair, 2007

The questionnaire survey is adopted to examine the competitive advantages of using various green technologies and the significance of barriers in applying green elements in practice. Based on the questionnaire database of the first round in Chapter 6, the

questionnaire survey in this study was also conducted among senior managers of developers and researchers in the relevant academic fields. Initially, a list of 95 real estate firms was identified from two databases (China Real Estate Industry Business Directory and the Year Book for Chinese large scale real estate and construction enterprises). After that, an invitation letter for participating the survey and e-mail were sent to the directors of these 95 organizations. 55 organizations indicated their willingness to participate the survey exercise, therefore, the structured questionnaire were distributed by e-mail or post to the directors of those firms accepting the survey invitation. To increase the sample size, ‘snowball’ sampling method is used. In other words, the directors were invited to help distributing the questionnaire between their senior managers and their business partners or senior practitioners whom they know of having rich experience in the discipline. As a result, 135 questionnaires were dispatched via both e-mail and post. Finally, 45 effectively completed questionnaires were returned. The survey was carried out from July to September 2009.

These experts are selected from a wide range of disciplines in the Chinese real estate market, including governmental department, housing developers, contractors, architectural firms, property management firms. The details of their backgrounds are summarized in Table 7.3.

Table 7.3 Backgrounds of the survey respondents

Classification of the respondents	No.
Officials in Planning and Zoning Department	2
Senior managers of state-owned housing developers	10
Senior managers of private housing developers	11
Contractor	7
Real estate consultants	7
Architects	6
Senior manager in the property management firms	2

The questionnaire comprised three parts: (a) questions about the respondents' individual and organizational backgrounds; (b) the opinions on the contribution significance of green elements to gaining competitive advantage, and (c) the opinions on the major barriers of applying green elements. The sample questionnaires are shown in Table 7.4 and Table 7.5. In the following questionnaires, there are two major parts. In part I, there is a list of green elements and technologies applicable in the process of housing development. The degree of significance of each element for helping the business to gain competitive advantage is judged by the respondents (See Table 7.4). In part II, there is a list of barriers that affect the application of green elements in the process of housing development. The significance degree of each listed barrier is indicated by respondents (See Table 7.5).

Table 7.4 Part I: Significance of green elements for gaining competitive advantage

Code	Green elements	Degree of significance				
GE-X ₁	Considering environmental impact when selecting project site	1	2	3	4	5
GE-X ₂	Design for better microclimate and environmentally responsible housing	1	2	3	4	5
GE-X ₃	Optimizing building orientation and configuration for energy performance in design stage	1	2	3	4	5
GE-X ₄	Application of underground space development technology to save land resources	1	2	3	4	5
.....					
GE-X ₂₁	System for green facility management	1	2	3	4	5

(1-least significant, 2- fairly significant, 3 significant, 4 very significant and 5 extremely significant)

Table 7.5 Part II: Barriers for applying green elements for housing developers

Code	Barriers for applying green elements	Degree of seriousness of barriers				
BX ₁	High green appliance design and energy-saving material costs	1	2	3	4	5
BX ₂	Insufficient policy implementation efforts	1	2	3	4	5

BX ₃	Technical difficulty during the construction process	1	2	3	4	5
.....					
BX ₁₀	Stakeholder had no power to enforce or require green measures	1	2	3	4	5

(“1” - least significant, “2” - fairly significant, “3” - significant, “4” - very significant and “5” - extremely significant)

The Likert scale is used to help respondents present their opinions, which is commonly used for rating the relative significance of individual factors through examining experts’ opinion (e.g., Chan and Kumaraswamy, 1997; Shen and Liu, 2003). The respondents were invited to give their opinion on the relative significance of each green element to gaining competitive advantage. Grade ‘1’ denotes for least contribution to competitiveness and ‘5’ for most. On the other hand, the respondents were invited to judge the significance degree of each listed barrier to the application of green elements, with grade “1” as least significance, and “5” most. The feedbacks from respondents are analyzed using relative significance value. Relative significance value is considered as a typical methodology for identifying the key factors among a number of individual factors (Chau *et al.* 1999; Moungnos and Charoenngam, 2003).

7.4 Analysis on survey results

The questionnaire survey includes two major parts, the green elements for gaining competitiveness for real estate developers and the barriers to applying the green elements. The data analysis results can be demonstrated as follows.

7.4.1 Effective green elements for gaining competitiveness

According to the survey data, the relative significance of each of the 21 green elements was derived on the basis of the mean values of responses, as shown in Table 7.6. The results can also be presented graphically in Figure 7.1. It can be seen that the most effective green elements for helping real estate developer gain competitive

advantage is considered as solar system with the highest mean value of 4.311, followed by “Optimizing building envelope thermal performance” (4.044) as the second, and “Low E insulation window technology” (3.978) as the third. The “use of efficient equipment and appliances for natural ventilation” and “application of prefabricated concrete technology” were ranked as fourth and fifth respectively. These green elements are considered effective to bring benefits for housing developers to gain competitive advantages, such as cost reduction and image promotion.

Table 7.6 The relative significance of green elements to gain competitive advantages for housing developers

Code	Responses					Mean	Rank
	1	2	3	4	5		
GE ₇	0	0	4	23	18	4.311	1
GE ₁₀	0	0	10	23	12	4.044	2
GE ₁₅	0	0	11	24	10	3.978	3
GE ₁₉	0	3	17	19	6	3.622	4
GE ₈	0	2	22	21	0	3.422	5
GE ₁₂	0	2	23	20	0	3.4	6
GE ₃	0	4	21	19	1	3.378	7
GE ₁₈	0	10	26	9	0	2.978	8
GE ₉	0	9	29	7	0	2.956	9
GE ₆	3	7	24	11	0	2.933	10
GE ₁₇	2	14	21	8	0	2.778	11
GE ₂	4	11	23	7	0	2.733	12
GE ₅	0	17	24	4	0	2.711	13
GE ₁₄	1	16	24	4	0	2.689	14
GE ₁	3	15	23	4	0	2.622	15
GE ₁₁	2	18	21	4	0	2.6	16
GE ₄	3	16	24	2	0	2.556	17
GE ₂₁	3	19	20	3	0	2.511	18

GE ₂₀	4	20	19	2	0	2.422	19
GE ₁₃	4	23	18	0	0	2.311	20
GE ₁₆	4	24	17	0	0	2.289	21

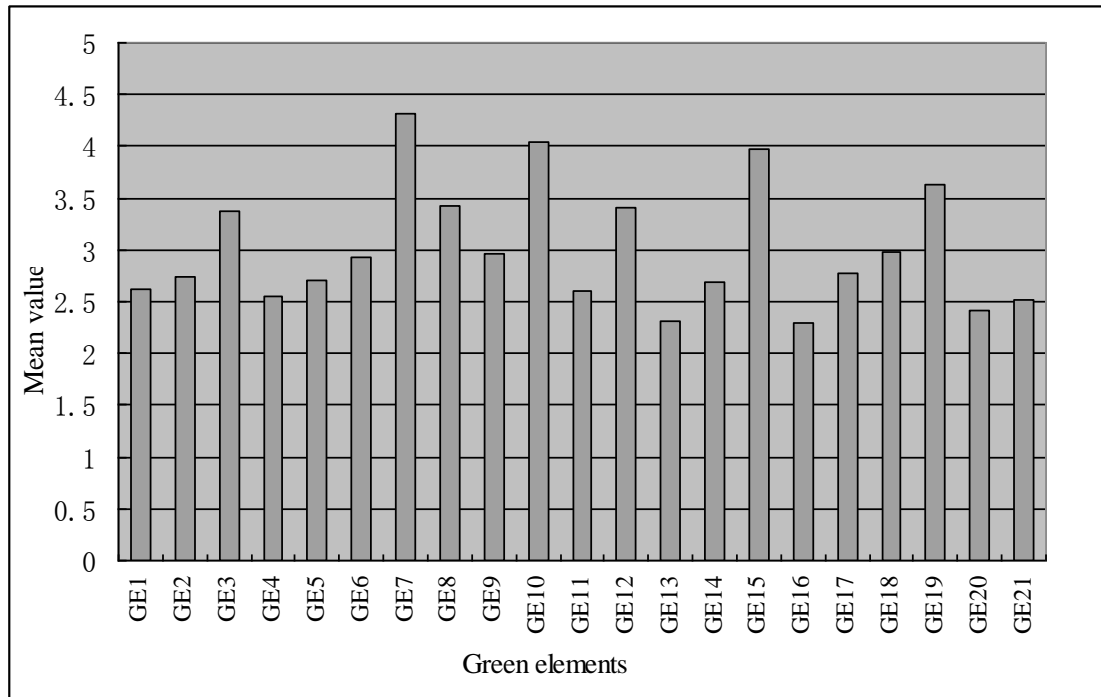


Figure 7.1 The distribution of significance value between green elements applicable in the real estate development

7.4.2 Barriers to the application of green elements

On the other hand, the barriers to applying green elements in real estate development are presented and some of them are significant. The relative significance degree of each of the ten listed barriers was identified on the basis of mean values of individual responses, as shown in Table 7.7. And the results can also be shown graphically in Figure 7.2. The major barriers include “higher costs for green appliance design and energy-saving material”, “higher cost in relation to customers demand” and “insufficient policy implementation efforts”.

Table 7.7 The relative significance of barriers in adopting green elements for real estate development

Code	Responses					Mean	Rank
	1	2	3	4	5		
BX ₁	0	0	5	20	20	4.311	1
BX ₈	0	0	6	28	11	4.044	2
BX ₂	0	0	13	22	10	3.978	3
BX ₇	0	0	12	26	7	3.622	4
BX ₆	0	0	16	23	6	3.422	5
BX ₃	0	1	19	24	4	3.4	6
BX ₉	0	0	21	19	5	3.378	7
BX ₄	0	0	23	17	5	2.978	8
BX ₅	0	2	20	19	4	2.956	9
BX ₁₀	0	1	20	23	1	2.933	10

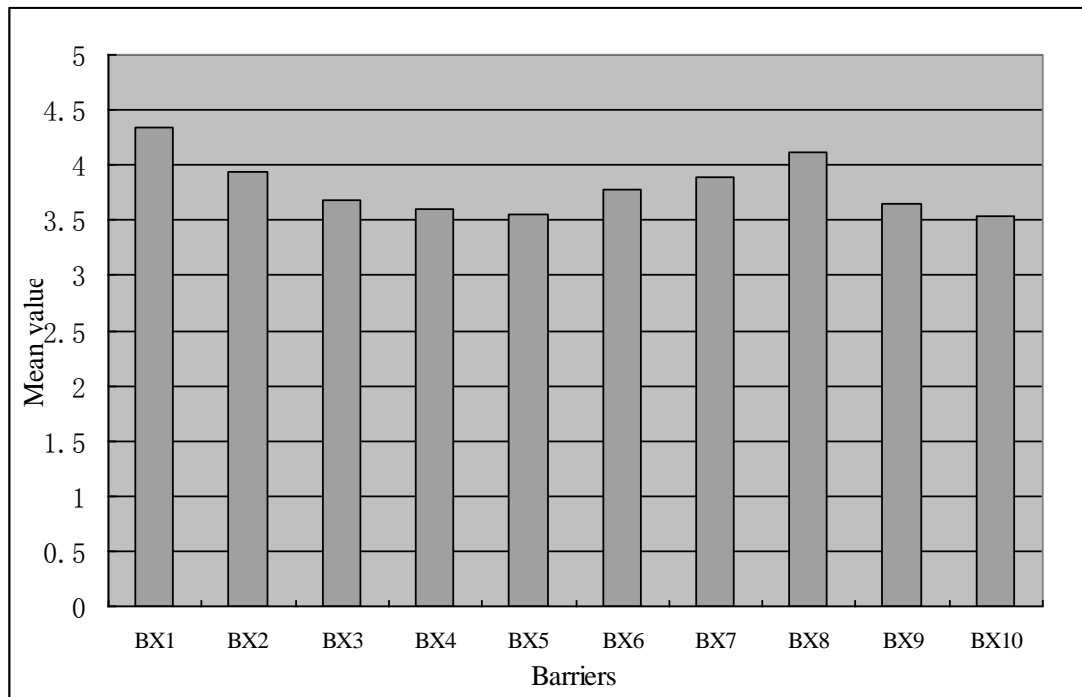


Figure 7.2 The distribution of reluctance degree between the barriers for green elements' application

It appears that financial consideration is the biggest barrier in promoting green strategy in real estate development process. This is echoed with previous studies. The report by Urban Land Institute (2002) suggests that using green materials would cost 3% to 4% more than using conventional construction materials. The investigation

conducted by the Ministry of Construction (MC, 2005) involves 3000 housing projects and shows that only 58.53% of the projects were designed in line with energy efficient standard, and only 23.25% were built to meet the energy efficient standard. The report reveals that cost increase is the key factor affecting the application. The majority of this cost increase is due to the increased architectural and engineering (A&E) design time, modeling costs and time necessary to integrate green building practices into projects (Kats, 2003). This was echoed in an interview of this study with a real estate developer, who opined that his company does not seek to use green technologies because the company expects higher cost and the difficulty of finding suppliers for green material and green appliances. Other studies have also demonstrated that the compliance with energy efficiency standards in residential buildings is very low due to a lack of professional experts and financial resources that can not address the complex construction process and complicated techniques induced by green technologies (Richerzhagen *et al.*, 2008).

Lack of motivation is also a major barrier to applying green strategy in the process of real estate development. The study by Richerzhagen *et al.* (2008) suggests that most of the existing buildings in China do not comply the principle of effective energy conservation due to the lack of motivation with energy saving. Furthermore, the commitment of engaging green development is largely undermined by weak mechanisms and insufficient legal enforcement. This is also echoed in another interview with a project manager involved in the survey of this study, who explained that the project he has been involving adopted little green elements as there is no compulsory requirements, which will otherwise cost more.

7.5 Case studies

In order to identify what kinds of competitive advantages real estate developers can gain by implementing green strategies, four case studies were conducted for further understanding the survey results. The case study can also help verify survey results and deepen the understanding on the implications of the survey. Discussions and findings are presented as follows.

In fact, real estate developers adopt various approaches and strategies to gain competitive advantages, including green development strategy. The data used for the analysis in this section are collected from four real estate development cases. The four cases are awarded with green building label in the green building rating system in China (Figure 7.4). Figure 7.3 shows a sample award certificate for a green building in China. Case I is Wanke City Project developed by China Vanke. The project is located in Shenzhen, with 126, 000 m² building area and completed in 2008. The Case II is called City Xin-yu Property project developed by Jindu Group. The project is located in Hangzhou, with 234, 000 m² building area and phase-I project was completed in 2008. Case III is OCT Property project developed by OCT Properties. The project is located in Shenzhen, with 5130 m² building area and completed in 2008. Case IV is Merchants Tiger Apartment developed by China Merchants Property. The project is located in Shenzhen, with 42444.13 m² building area and was completed in 2004 (See Table 7.8).



Figure 7.3 Sample Certificate for energy efficient building in China (Cai et al., 2009)

Table 7.8 A profile of four case studies

Case	Location	Developer	Project size	Year of completed
Vanke City	Shenzhen	China Vanke	126,000 m ²	2008
City Xin-yu Property	Hangzhou	Jindu Group	234,000 m ²	2008
OCT Property	Shenzhen	OCT Properties	5130 m ²	2008
Merchants Apartment	Tiger Shenzhen	China Merchants Property	42444.13 m ²	2004



(a) Vanke City

b) City Xin-yu Property



(c) OCT Property

(d) Merchants Tiger Apartment

Figure 7.4 The four green label building situated in Shenzhen and Hangzhou

The interview discussions in each case study lasted two hours, involving full discussion between the researcher and the project managers who have been working on the concerned projects. The competitiveness indicators used in discussion are those key indicators presented in Chapter 5, highlighted in Table 7.9.

Table 7.9 The indicators for understanding real estate developer's competitive advantage

Indicators			
CI ₁ - Corporate brand reputation	CI ₂ - Availability of rich human resources	CI ₃ - Availability of consumer resources	CI ₄ - Access to a diverse range of capital
CI ₅ - Housing product innovation capability	CI ₆ - Availability of information channels	CI ₇ - Production cost planning and control capabilities	CI ₈ - Capability to expand finance channels and to manage cash liquidity
CI ₉ - Quality control and planning capability	CI ₁₀ - Marketing-oriented R&D Capability	CI ₁₁ - Value chain integration capability	CI ₁₂ -Commitment on social responsibility
CI ₁₃ - Cheaper land resource	CI ₁₄ -Reduction in construction costs	CI ₁₅ -Developing unique green housing	CI ₁₆ -Reduction in operation and maintenance costs
CI ₁₇ - Use of industrialized	CI ₁₈ - More financial channels for	CI ₁₉ - Green brand reputation	

The key questions raised in the interview discussions include: what competitive advantages (in referring to the indicators listed in Table 7.9) the developers can gain by engaging various green elements listed in Table 7.1; what are the major barriers encountered in implementing green elements during housing development process. The process of developing a residential project is divided into three stages: project plan and design, construction and operation and management. The data collected from case study discussions are summarized in Table 7.10. The information can be generalized to a profile for depicting the application of green strategy in housing development process, as shown in Figure 7.5.

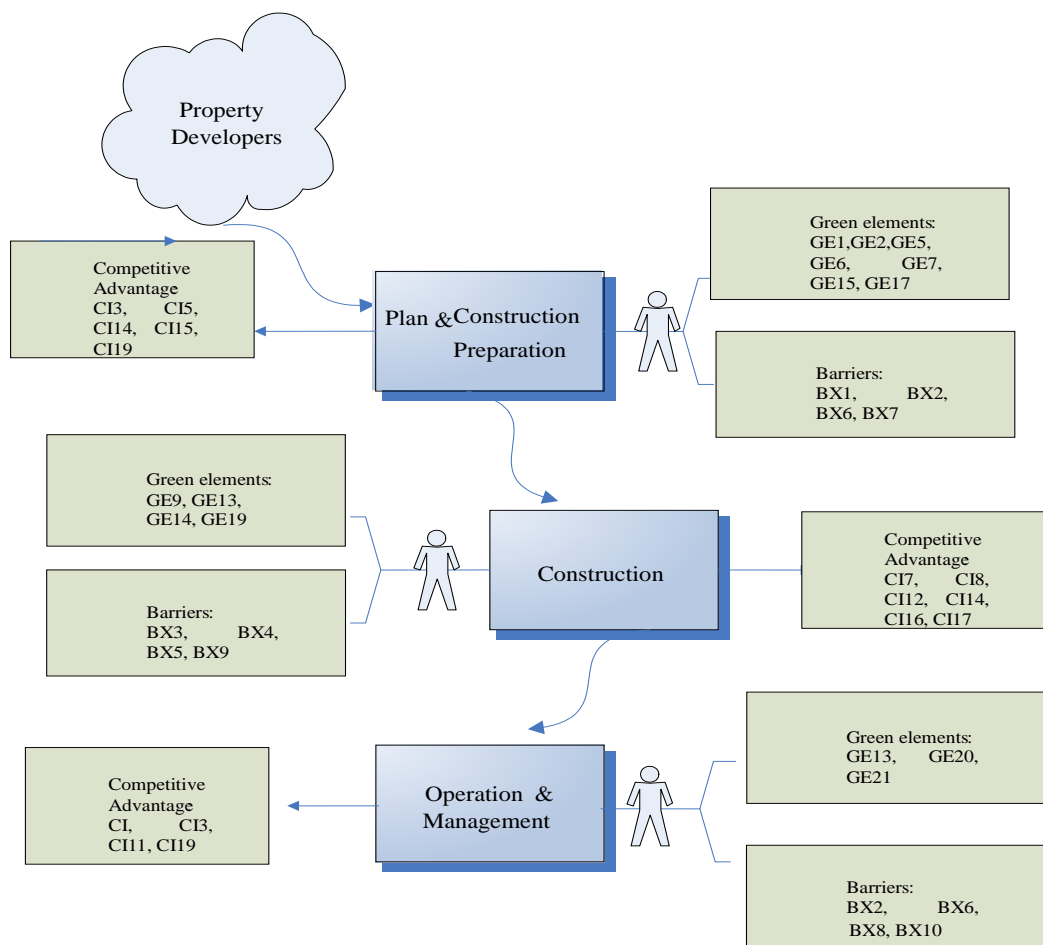


Figure 7.5 Application of green strategy in real estate development process

Table 7.10 Adopted green elements, encountered barriers and gained competitive advantages

	Green elements (refer to Table 7.1)	Barriers encountered (refer to Table 7.2)	Competitive advantage (refer to Table 7.6)
Plan & construction preparation	<p><u>Case I:</u> GE₁; GE₂; GE₅; GE₆; GE₁₅</p> <p><u>Case II:</u> GE₆; GE₇; GE₈; GE₁₀ ; GE₁₂; GE₁₅; GE₁₆</p> <p><u>Case III:</u> GE₄; GE₆; GE₉; GE₁₂; GE₁₅; GE₁₇</p> <p><u>Case IV:</u> GE₁;GE₂; GE₃; GE₅; GE₆;GE₇ GE₁₅; GE₁₇; GE₁₈</p>	<p><u>Case I:</u> BX₁; BX₄; BX₅; BX₆; BX₇;BX₉</p> <p><u>Case II:</u> BX₁; BX₂; BX₆; BX₇; BX₁₀</p> <p><u>Case III:</u> BX₁;BX₆;BX₇; BX₁₀</p> <p><u>Case IV:</u> BX₁; BX₂; BX₆;BX₇</p>	<p><u>Case I:</u> CI₃; CI₅; CI₆; CI₁₃; CI₁₅; CI₁₉;</p> <p><u>Case II:</u> CI₁; CI₃; CI₄;CI₅; CI₁₀; CI₁₅; CI₁₈;CI₁₉</p> <p><u>Case III:</u> CI₁;CI₁₂;CI₁₃;CI₁₄;CI₁₆;CI₁₉</p> <p><u>Case IV:</u> CI₃; CI₁₂; CI₁₄; CI₁₅; CI₁₉</p>
Construction	<p><u>Case I:</u> GE₁₃; GE₁₄; GE₁₉; GE₂₁;</p> <p><u>Case II:</u> GE₉; GE₁₂; GE₁₃; GE₁₉</p> <p><u>Case III:</u> GE₁₃; GE₁₄</p> <p><u>Case IV:</u> GE₁₃; GE₁₄; GE₁₉</p>	<p><u>Case I:</u> BX₃; BX₅; BX₇; BX₈; BX₁₀;</p> <p><u>Case II:</u> BX₃; BX₄; BX₅; BX₉</p> <p><u>Case III:</u> BX₄; BX₅; BX₉</p> <p><u>Case IV:</u> BX₃; BX₄; BX₅</p>	<p><u>Case I:</u> CI₇; CI₉; CI₁₂; CI₁₇</p> <p><u>Case II:</u> CI₅; CI₈; CI₁₂; CI₁₄; CI₁₆</p> <p><u>Case III:</u> CI₇; CI₈; CI₁₄;CI₁₇</p> <p><u>Case IV:</u> CI₁₂; CI₁₆; CI₁₉</p>
Operation & Management	<p><u>Case I:</u> GE₁₃; GE₂₀</p> <p><u>Case II:</u> GE₁₃; GE₂₀</p> <p><u>Case III:</u> GE₁₃; GE₂₁</p> <p><u>Case IV:</u> GE₂₀; GE₂₁</p>	<p><u>Case I:</u> BX₂; BX₄;BX₁₀</p> <p><u>Case II:</u> BX₈; BX₆</p> <p><u>Case III:</u> BX₈; BX₁₀; BX₂</p> <p><u>Case IV:</u> BX₆; BX₈;BX₁₀</p>	<p><u>Case I:</u> CI₃; CI₉; CI₁₉</p> <p><u>Case II:</u> CI₃; CI₁₁; CI₁₉</p> <p><u>Case III:</u> CI₁; CI₂ ;CI₁₉</p> <p><u>Case IV:</u> CI₁; CI₃; CI₈; CI₁₉</p>

The competitive advantages gained from implementing these green elements between these four cases are compared, and the barriers encountered are also highlighted, as shown in Table 7.10, it can be seen that the four cases adopted different green elements at different development stages. For example, the major considerations given by China Vanke at the design stage include environmental resource conservation, efficient utilization of resources and energy efficient design, and good ventilation for living for residents. Vanke has strong financial resources and can afford to pay more resources to apply green appliances and equipments to achieve better green building performance. Referring to the developer OCT Properties, more

emphasis was given on the efficient utilization of land resources at design stage, for example, application of the underground space development. By making use of underground space, OCT Properties provided car parking in responding to the users' demand, and mitigating the company's difficulty of limited land bank. Furthermore, at construction stage, the Case II, City Xinyu project considers more on using environment-friendly construction materials, such as fabricated concrete components. But Case I, Case III and Case IV adopt emphasizing on the minimization of noise, dust and traffic disruption to the living environment. The investigation on the four cases shows that at property operation and management stage, more attention was given to the monitor and maintenance of green features. For example, the Case IV, Merchants Tiger Apartment, adopts the green appliance monitor and maintenance system to identify and solve the environmental problems affecting the living conditions of the property users. Other three cases, namely, OCT properties, Vanke City and City Xinyu, have introduced the system of recyclable materials, appliance and waste management facilities.

The above analysis has demonstrated that real estate developers in China have incorporated green strategy into their business in order to build up reputation and gain competitive advantages at different stages in implementing real estate projects. Various green elements have been used for minimizing the impacts of their business activities on the environment. Emphasis is particularly given to improving living environments of the residents, which is considered an effective strategy to gain competitiveness. Nevertheless, different firms consider different green strategies in order to gain competitive advantages as each firm has different background and resources such as capital resources, technique conditions and corporate visions.

7.6 Discussion

The effectiveness of implementing green strategy in real estate development depends largely on real estate developer's willingness. Developer's willingness is contributed by what he can gain. Therefore, understanding whether developers can gain and what can be gained through green strategy is essential. The four case studies analyzed in previous section suggest that real estate developers can gain certain competitive advantages by adopting certain types of green strategies. The green elements contribute to reduction of energy and maintenance costs. The following discussions show several typical examples where applying green elements contributed to improving real estate developers' competitiveness.

Adopting green strategy is considered the commitment on social responsibility, and by assuming this social responsibility, real estate developers can gain good image which is intangible asset. For example, the adoption of green roof can reduce ambient urban temperatures; therefore mitigate the urban heat island effect, which in turn contribute to improving public living environment. This social benefit can be well received by the public; therefore real estate developers can increase its public reputation and image. It was revealed from the discussions with professionals involved in the case studies that the green image can result in higher price when developers sell properties. For example, Jindu Group has obtained the green reputation and green housing image through using various green strategies, such as the prefabrication technology. By adopting this green strategy, the developer has attracted many high-income buyers with higher sales price. This strategy is also echoed with the interview discussion with the project manager in China Merchants (Case IV). The manager opined that a reputation for building green housing will not only help enter into new real estate market in the future, but can also improve

relationships with governmental planning department, local communities and consumers. Providing high-quality green space can also show the commitment on corporate social responsibility (CSR). CSR is widely considered a major factor affecting a business firm's image competitiveness. It was reported that real estate developers in UK started to grow a CSR culture within the industry (Zitzler *et al.*, 2000). Increasing number of real estate developers have started realizing the importance of building up green reputation in improving their competitive advantages. The study by World Wildlife Fund (WWF) (2007) reported that 14 large real estate developers in UK had built up green reputation in the market. This is echoed in another report by WWF (2005) suggesting that 'investing in green housing' can achieve not only high standards of environmental performance but also social performance, which can help build advantage to attract customers (Deb *et al.*, 2000). In the context of China, the case studies in this research indicate that real estate developers have started to realize the importance of building up green brand reputation.

The second typical competitive advantage that real estate developers can gain through adopting green strategy is receiving 'cheaper land prices' (CI₁₃). In China, all the land in urban area is owned by the government. The land-use rights and land ownership are separated. Land ownership cannot be sold but the land-use rights can be sold. The sale of land-use rights means that an urban government, as a representative of the state, sells land-use rights to buyers for a fixed period through auction, tender, or negotiation (Ding, 2003). When a piece of land is sold, it is actually the right of land use sold for a specified period of time. The Chinese government has established time-limits for selling different categories of land use rights: 70 years for residential land use, 50 years for industrial land use, and 40 years for commercial, tourism and

recreation land use (Wang and Murie, 1999). There are various terms and conditions specified in the contract of land use rights when developers procure the land from the government, for example, the qualifications of the buyers, the time period for paying the land-use rights fees, and commitments to the environmental protection in the development area. The government in certain situation has been offering real estate developers with favorable land price where green elements are to be implemented by the developers. The government also favors those developers who have a track record of delivering green development projects. For example, in Case I, it was revealed that the developer received favorable land price for the project development as the developer was convinced by the government of employing ecological landscape technology and constructing green buildings. The acquisition of the favorable land has contributed to good profit-making from this real estate development. However, this is a special case where the developer did receive favorable land price at land sale stage. In general, the government in China offers real estate developers with tax rebates and financial incentives at the property sale stage in which various green elements can be practically found in order to encourage development of green properties (Chhabara, 2008). This practice has been adopted in other developed countries or regions. For example, the Hong Kong government has introduced the concession scheme in 2001 for the gross floor area (GFA) where green and energy-saving buildings are designed and implemented (Joint Practice Notes (JPNs) No. 1 and 2, 2001).

‘Reduction in construction costs’ (CI₁₄) was ranked as third significant competitive advantage from applying green technologies. For example, on-site recycling methods and reducing material consumption can save construction materials cost. This competitive advantage has been found in the Case II and III. As echoed by the project managers in the two concerned cases, the adoption of waste reduction procedures and

methods helped the developers in saving considerable construction materials in comparing to those projects where waste management is not properly adopted. Less materials consumption not only means reducing construction cost, but also results in less environmental impact. Consequently, lower liability and remediation costs will be achieved. The discussions over case studies further suggest that green technology will be more attractive in the future when traditional construction materials price will continue increasing.

The fourth competitive advantage is ‘developing unique green housing product’ (CI₁₅). The unique green product has good potential market opportunities when buyers start to demand for higher quality living environment. For example, China Merchants Property (Case IV) was reported having competitive advantage by satisfying the customers’ expectation on green living environment. The developer applied various green appliance and materials, and all the individual flats in this project were well received by users. For another example, the case China Merchants gave emphasis on design for comfort and improved indoor air quality. This strategy helps the developer offer unique green products to lead the market and gain competitive advantage. This is echoed in the discussions with the project managers in the Cases I, II and IV, opining that developing unique green real estate product is the future direction for business growth, and those developers leading the mission will have advantages in the market competition.

‘Reduction in operation and maintenance costs’ (CI₁₆) is identified as another significant competitive advantage that real estate developers can gain by delivering green products. This is particularly addressed in the case III, the OCT Property. By employing the green technologies, such as water-saving appliances, envelope

optimization technology, and air pressure automatic passive ventilation technology, the OCT expects the operation cost to decrease in the long run. Although the initial cost is higher to the developer, the real estate was well received in the market as the buyers are convinced of cost saving in operation. This advantage was also reported from Case I, where the gray water reuse rate is increased to 30%, and the use of renewable energy can bring energy saving by 5% (Feasibility report of sample energy efficient building for China Vanke Property, 2005). The developer generated good profits from this project as buyers were willing to pay higher price.

‘Use of industrialized components’ (CI₁₇) is considered as another competitive advantage to real estate developer. The industrialized components are increasingly used in real estate development, including the integrated elements of construction and decoration, and prefabricated concrete elements. This competitive advantage was reported in the cases I and IV. Prefabricated elements were extensively applied in these two cases, and construction time was saved significantly. This helped the developers deliver house products earlier to the market, thus to generate incomes as soon as possible by selling properties. This is considered very important advantage as developers can have sufficient funds by receiving payments in time. Using these funds can help developers reserve more land and develop more projects.

Furthermore, adopting green strategy can help developers secure ‘more financial channels for developing green properties’ (CI₁₈). Financial capital is regarded as one of the core competitive advantages for real estate developers (Ambrose and Peek, 2008). Recent research has shown that green development can attract more investment funds (Igloo, 2005). Investment funds are one of the key channels for developers to obtain capital. For example, Socially Responsible Investment (SRI) is one of the

typical investment channels for developing green properties (Carter, 2006). Nevertheless, it appears that this advantage has not been well recognized in the surveyed cases. To take advantage of this emerging capital channel opportunity, real estate developers are advised to adopt various tools to carry out the green practice to attract more SRI in the future.

Nevertheless, there are barriers in applying green strategies in real estate development process. The four practices investigated in this study show that significant barriers exist in applying green strategies in the whole real estate development processes, including plan and design, construction and operation & management stages. The case studies demonstrate the major barriers (see Table 4) and their impacts on promoting green strategies in practice. These major ones include ‘high green appliance design and energy-saving material costs’ (BX₁), ‘higher cost in relation to customers’ demand’ (BX₈), and ‘insufficient policy implementation efforts’ (BX₂). The discussions on the four cases echo that the implementation of all the concerned projects did encounter with these barriers, such as BX₁ and BX₈, which have been identified as the top two barriers in the survey. For example, according to the project manager in Vanke City (Case I), though the developer was keen on using green elements, the developer did not use these elements as the business expected that more money would be needed to implement these green elements. Very often, these extra costs would be transferred to the end users who will not be willing to pay this extra money. In fact, the disagreement on this extra cost between real estate developers and buyers presents the barrier (BX₁) to the application of green elements in the real estate projects in China. Other barriers have also hindered to different extents the use of various green elements in practice. Developers shall consider their

own resources and capability while choose suitable green strategy in order to reduce the barriers encountered, thus effective competitive advantage can be gained.

7.7 Summary

There are various green elements applicable to the development of real estate projects across project life cycle. The discussion in this chapter identified the commonly referred green elements such as ‘solar system’, ‘green roof technology’ and ‘low-E insulation window’. It has been found significant barriers exist in applying green elements. These major barriers include ‘higher costs for green appliance design and energy-saving materials’, ‘lack of motivation in relation to customers’ demand’ and ‘insufficient policy implementation efforts’. With the presence of the barriers, the question “why real estate developers should go for green?” is addressed. The case studies used in the study suggest that adopting green elements can contribute to improving real estate developers’ competitiveness in various aspects. Green elements can help developers differentiate their products thus provide unique commodities to the market with green components. Using green elements, real estate developers can achieve the cost reduction in construction and operation of products, gain favorable land prices, acquire more financial channels, and obtain the green brand reputation. It is encouraging to note that a growing number of real estate developers have started to adopt green strategies in their business activities, as evidenced by the four cases examined in this study. Nevertheless, the implementation of green strategies should be achieved through various mechanisms including state policy intervention, community engagement and stakeholder involvement, education and training. The guidance and commitments from government on promoting green real estate development can drive and motivate housing developers to adopt green strategy, for example, by adopting favorable tax policy and incentive schemes for those developers who incorporate

green elements in their developments. The findings in this chapter provide good references for further comparative study on the application of green strategy in other real estate industries.

**CHAPTER 8 RISK MANAGEMENT
STRATEGY FOR COMPETITIVENESS
IMPROVEMENT OF REAL ESTATE
DEVELOPERS**

CHAPTER 8 RISK MANAGEMENT STRATEGY FOR COMPETITIVENESS IMPROVEMENT OF REAL ESTATE DEVELOPERS

This chapter presents one of the key strategies for competitiveness improvement, namely, risk management strategy. The study will investigate how the risk strategies contribute to the competitiveness of developers.

- *8.1 Introduction*
- *8.2 Policy environment for real estate business in China*
- *8.3 Policy risks during the processes of real estate development*
- *8.4 Major policy risk and its relevant management strategies*
- *8.5 Managing major policy risks for gaining competitiveness improvement*
- *8.6 Summary*

CHAPTER 8 RISK MANAGEMENT STRATEGY FOR COMPETITIVENESS IMPROVEMENT OF REAL ESTATE DEVELOPERS

8.1 Introduction

The analysis on the CCIs for real estate developers in Chapter 6 suggest that risk management strategy is one of the major indicators for understanding a developer's competitiveness. This chapter will concentrate on analyzing how developers can improve their competitiveness through adopting proper risk management strategy.

Real estate development project subjects to more risks in comparing to other business activities. This is particularly true in those developing countries or regions such as China. The business performance to a real estate developer depends largely on the mechanism and capability of managing various risks. There are various risk factors addressed in previous studies in referring to real estate business. Getting a real estate project from the initial investment appraisal stage through to the completion of construction and into disposal and use involves a complex and time-consuming design and construction process. This process involves a multitude of professionals from different organizations and governmental departments, with different skills and interests; and a great deal of efforts is required to coordinate the wide range of activities. A variety of risks may occur during the development process, and many of them can cause losses to the real estate developer.

There are two major types of risks for real estate industry: internal and external. Internal risk mainly comes from the business value chains. For example, the risks occur during the design and planning stage, the cost overruns, project delay, and

quality problems. All of these risks have been well addressed in the previous literatures (Newell and Webb, 1996; Akintoye and MacLeod, 1997; Kartam and Kartam, 2001; Li et al., 2004; Shen *et al.*, 2001). External risk mainly refers to the policy risks which bring uncertainties for developers. The internal risks discussed in the previous literatures can be considered as valuable reference in this study; however, the external risks are more apparent for real estate developers in China.

In particular, policy risks are considered having major impacts to the real estate business in those developing and fast-growing countries such as China (Shen *et al.*, 2001; Shen and Wu, 2005). Previous studies suggest that policy environment is an important vehicle for developing real estate business (Hayakawa and Hirayama, 1991; Chau, 1997; Buckley and Kalarickal, 2005). The experience in those advanced countries or regions suggests that successful real estate development relies largely on the provision of proper policies and legal system (Hsu, 2001). Any unexpected changes in policy or legal system will likely bring influence on the performance of real estate investment as construction cost or construction period of the investment may change. This risk influence is more significant in those developing countries or regions (Zhang, 2001). The study by Shen *et al.* (2001) demonstrates that policy risk is the most significant type of risks to real estate developers in the Chinese real estate industry.

Whilst many literatures have covered the general environment for real estate development in China, there is no study on how competitiveness can be gained through managing policy risks. The analysis on real estate policy risk remains a neglected aspect in the existing literatures. In late 1980s, Walker and Flanagan (1987) provided one of few typical works investigating the Chinese property investment

environment for joint ventures. Flanagan and Li (1997) have examined the economic conditions for overseas construction professionals in China. The works by Shen *et al.* (2001) present the procedures for foreign real estate firms to enter into the Chinese market. Zhang (2000) examined the changes of the housing finance system and their impacts to the success of real estate market in China. In fact, housing price can be easily affected by policy (Berry and Dalton, 2004). Other studies provide various lists of risk factors in the operation of real estate business (Shen, 1990; Li *et al.*, 1998; Zhou and Zhou, 1998; Shen *et al.*, 2001; Chen, 2004; Choi *et al.*, 2004; Adair and Hutchison, 2005; Bond *et al.*, 2007; Lin *et al.*, 2009). However, these risk identifications were summary lists concerning overall risk aspects including natural, economic, political, physical, management and technical risks. It appears that little research has been conducted to investigate systematically the risks associated with developers with particular reference to the Chinese real estate market which has special characteristics. Furthermore, the existing studies overlooked the difference of risk effects in different real estate development stages. In fact, risks have different impacts on real estate project development at different development stages.

Therefore, this chapter will focus on discussing policy risks and the way that the real estate developers to manage policy risks in order to gain competitiveness in the Chinese real estate market. Comprehensive investigation is given on the policy risks existing in the process of developing real estate projects in China. The influences of policy risks on real estate developers at different real estate development procedures are examined.

8.2 Policy environment for real estate business in China

Before understanding the policy risks in the Chinese real estate market, it is important to appreciate the development of policy environment in the market. In the process of implementing economic reforms since early 1980s, the Chinese Government has been reforming the Chinese legal system by introducing various laws and regulations, such as the Constitution of the PRC in 1982, Civil Law of the PRC in 1986, Land Administration Law of the PRC in 1986, Urban Planning Law of the PRC in 1989, the Administrative Urban Real Property Laws of PRC in 1995, Regulations for the Administration of Land Reserves of the PRC in 2007. In China, legal system consists of laws and regulations. And laws are made by the National People's Congress or its Standing Committee, and regulations are made by the Central Government for the application across the whole country or by Local Governments for local applications. Other policies and rules issued by central or local governments are supplementary to laws and regulations.

In line with the economic reforms, the Chinese real estate industry has been promoted since early 1980s for addressing the challenges of housing shortage. China has been facing the challenges of housing shortage for many years, which has been a complicated and comprehensive social problem. Housing was centrally planned and allocated with free of charge to citizens, called welfare housing system (Yu, 2006). The welfare housing system was adopted over three decades in China from early 1950s, during which there was no real estate market for transaction or lease (Tang *et al.*, 2006). And there was no market for developing real estate projects, and all construction organizations were state owned and worked not for profits but for the completion of the tasks assigned by government (Li, 1999; Wang and Murie, 2000; Buckley and Kalarickal, 2005; Seko and Sumita, 2007).

In order to promote the real estate industry, the Chinese government has been introducing various laws and regulations for guiding the development of industry. For typical examples, the Regulation for the Implementation of Land Administration Law of the PRC was issued by the State Council in 1991 (SC, 1991a), the Interim Regulations of the PRC on Granting and Transferring the Land Use right in Cities and Towns issued by the State Council in 1991 (SC, 1991b), the Implementation Plan for a Gradual Housing System Reform in Cities and Towns issued by the State Council in 1998 (SC, 1998). In 1998, the Chinese Government declared the abolishment of the old welfare house system (SC, 1998), which specified that real estate user should be granted with land-use-right for property development. There are other relevant laws and policies regulating the practice of real estate business activities, with concerning the special aspects of land title and supply, urban planning, environmental protection, real estate pre-sale and sale, land acquisition and finance, property management, title transfer and registration (Wang and Murie, 1996; SC, 1998; Valletta, 2001; Lou and Palomar, 2006). The application of commercial housing system has brought rapid development of various types of real estate developers in the Chinese real estate industry, including state-owned firms, collective-owned firms, and sino-foreign joint ventures. According to the China Statistics Yearbook (2008), in 1996, the total number of enterprises for real estate development was 23190 and 2007 was 62518. The Chinese Government has considered real estate industry as one of the main sectors in the Chinese economy (Okpala, 1994; Chen, 2002). The report by the National Bureau of Statistics of China shows that the gross floor Space of Buildings completed in 2007 was 2039.93 million m², from null in early 1980s (NBSC, 2008). The per capita floor space of residential building in urban areas increased from 6.7 m² in 1978 to 27.1 m² by the end of 2006 (NBSC, 2007).

It is appreciated that the process of developing the legal system for real estate industry in China involves adjustment, revisions and introduction of new regulations and policies in responding to the changes and new developments in the industry. For example, the Regulation for Pre-sale and Sale of the Commodity House by the Ministry of Construction in 1999 was revised in 2001 (MOC, 2001) for reducing the illegal behavior in practice and ensuring the legal rights of purchasers. The Regulation of Supervising to the Construction Project Tending in Beijing has been revised three times since it took effect in 1987, being revised in 1994, 1995, and 2003 respectively (BJPG, 2003). The mechanism for transacting land use right was revised in 2004, declaring that no business land use right should be granted by means of private bilateral negotiation (Lou and Palomar, 2006).

By adjusting policies, the Chinese government has been improving the policy environment for ensuring that the real estate development is healthy and contributes to the development of the whole industry. As the Chinese government has been cautiously implementing its reform program, laws and policies have been issued on a trial basis in many cases. In this practice, revision and amendments of policies are often used as tools to adjust the mistake or error committed. Nevertheless, the changes and reversions on policy present risks and uncertainties to real estate developers' investment plan. For example, previously relevant Government departments would be responsible for the calculation of salable areas. But the revised regulation "Administration on Pre-sale of Commodity House (MOC, 2001) stipulates that the developers have to compensate the purchasers if the gross floor area in the contract is different with the gross floor area surveyed. This policy change not only induces more restrictions on the sale of the commodity house, but also shifts the risk of inadequate calculation of salable areas to developers.

8.3 Policy risks during the processes of real estate development

As mentioned in the above analysis that real estate developers will face different risks at different stages of their project development. The process of developing a real estate project has been well addressed in Chapter 4. The characteristics in processing a real estate project in China can be investigated through a model procedure including four major procedures: feasibility study, construction preparation, construction, and property disposal and management. The following sections will analyze the possible policy risks during each of the process.

8.3.1 Feasibility planning study

At this stage, a detailed investigation on the project environment should be carried out in order to ensure that the development is worth pursuing. Typical policy risks during feasibility study include: change of the policy on land supply, housing policy, finance policy, etc. For example, the policy for controlling state-owned land-use-rights transfer was revised in 2003 to stopping the grant of land-use-right for the construction of villas (MOSLR, 2003).

8.3.2 Construction preparation

Construction preparation concerns acquisition of the land-use-rights (LUR), project design, and obtaining plan permission for construction. In the process of obtaining official permissions before project construction, there are many types of policy risks presented to the developers, for instance, policy change in land planning and supply, transfer price of LUR. For a typical example, the People's Bank of China revised the credit policy in 2003 by tightening the loan quota to less than 70 percent of the total real estate investment (PBC, 2003). This policy change has resulted in the substantial business reduction particularly to these small or medium size developers as they do

not have sufficient capital. For another example, the State Council issued the policy for land conservation in 2008 (SC, 2008). This policy aims to optimize the efficiency of land use for residential projects by stopping the development of villa or luxury real estate project in the future. The regulation further specifies that future real estate development in urban areas should include no less than 70% to build low-cost, affordable and with the size of less than 90 m². This new policy limits the profit potential from developing high-class houses as developers have to change their development plans accordingly.

8.3.3 Construction

The construction translates project design to physical product, and project management team is responsible for the achievement of this translation.

Construction process also presents policy risks to project developer. For example, environmental policies may be changed, quality standards for project completion may be changed, down payment policy may be changed (Shen and Tam, 2002; SC, 2006; Chen, 2006). Any of these changes can bring the increase of development costs. For instance, the regulation issued in 2005 by SC (2005) specifies “Eight Clauses” for implementing the macro control on the housing supply structure and housing price, which limits the developers’ plans for high class real estate projects. For another example, a developer bought a piece of land for developing a high-rise building. The site is near to a reservoir. However, having just started the preliminary planning and design, the developer was asked to stop the development as the local government has recently revised the environmental policy. According to the revised environmental policy, this land should not be used for developing high-rise residential buildings. Although the negotiation was reached and led to the acquisition of land in another

location, the developer has lost the good time and opportunity for the development, and the occupied money for land for the long period of time has incurred considerable amount of interests.

8.3.4 Product sale and management

Upon the completion of a real estate project, developer will receive income by selling or leasing the completed properties and the expected profit from the development project can be realized. The disposal of the real estate is not only affected by the market information but also by policies. Changes of policies at this stage can bring losses to developers. For example, the pre-sale policies were revised several times in many local regions (GCB 2001; MC 2006). The revised policy in Shanghai requests that the sales of commercial houses should be started within 10 days after the developers obtain the pre-sale permit. Some other provinces stipulate that real estate pre-sale advertising must not be published unless the pre-sale permit for real estate projects is obtained (MC, 2006). The previous policy for pre-sale was that 25 per cent of the invested amount should be completed. The revised policy requests for the completion of the main structure for low-rise houses and completion of at least two-third of main structure for high-rise houses. These policy changes have significant impacts on sale plans thus the real estate business performance. For a further example of policy change, the China Central Bank (CCB, 2007) issued a new policy on 27th September, 2007, specifying that the down payment for purchasing second homes should not be less than 40%. This policy has reduced significantly the transactions in the real estate market, and consequently reduced the developers' profits.

The above analysis suggests that policy change environment in China induces risks to the business performance of developing a real estate project throughout all project stages. Based on this understanding, research findings on the major policy risks across various project stages are reviewed and further discussed in the next section.

8.4 Major policy risk and its relevant management strategies

8.4.1 Major policy risks for processes of real estate development

As discussed beforehand, there are different policy risks in the different real estate development stages, which include feasibility planning study, construction preparation, construction, and product sale and management. These major policy risks have been identified in various literatures such as such as Shen *et al* (2001), Li *et al* (1998), Tsui (2003), and Berry and Dalton (2004). In the optional risk list, there are 15 risk factors identified in the feasibility planning stage (Stage A), 20 in construction preparation (stage B), 9 in construction (stage C), and 11 in product sale and management (stage D) (Tusi, 2003). Some risks occur more than once in several stages. It can be noted that there are more risk factors in the first two stages in the real estate development process, and this is because that more uncertainties usually exist in the early stages in developing a real estate project.

Table 8.1 Policy risk factors in process of real estate development (Tsui, 2003)

Stage I: Feasibility Study and Decision Making:	
A-1*	Change of the financial interest rate policy
A-2*	Change of national economy policy
A-3*	Change of land supply policy
A-4*	Change of the housing policy in terms of incentive schemes
A-5*	Change of the mortgage policy
A-6	Change of the repayment policy
A-7	Change of the local policy on “guarantee return” schemes

-
- A-8 Change of the local policy on favorable terms offered to the affordable housing project (Anju Project)
 - A-9 Change of the local revenue policies related to the property development
 - A-10 Change of the local administration policies related to the property development
 - A-11 Change of the policies related to qualifications of the property developers, such as wholly-owned, joint venture
 - A-12 Change of the policies related to the restriction to the capital investment of the property developers
 - A-13 Change of the policies related to fund raising channels, such as local market or overseas market
 - A-14 Change of the policies related to the environmental protection
 - A-15 Change of the policies related to project planning and building procedures

Stage II: Construction Preparation:

- B-1* Change of the environmental policies
- B-2* Change of the local policies related to the transfer price of land-use-rights, such as waiving the transfer fees
- B-3* Change of the land transaction policies, such as the transfer of land-use-rights policy (auction, tender and by agreement)
- B-4* Change of the local policies related to the favorable terms applied to special projects
- B-5* Change of the policies related to contract terms for the transfer of land-use-rights
- B-6 Change of the policy related to land supply, such as restriction or relaxation
- B-7 Change of the policies related to housing system, such as the restriction on the type and the size of real estate project development
- B-8 Change of the local policy related to land use premium
- B-9 Change of the policy related to short-term land use planning
- B-10 Change of the policy related to medium and long term land use planning
- B-11 Change of the policies related to project planning, such as plot ratio, site coverage and green ratio
- B-12 Change of the land use purpose for the construction of urban facilities (the Government needs to acquire the land-use-rights from the planned real estate development)
- B-13 Change of the regulations and policies in response to the changes of finance market
- B-14 Change of the policies related to building design, such as plot ratio, building density, height restriction
- B-15 Revisions on the regulations for public real estate projects, such as road, hospital, school
- B-16 Change in environmental policies
- B-17 Change of approval procedures and conditions for construction of real estate project
- B-18 Change of the policies related to demolitions and redevelopments
- B-19 Change of the policies related to the land compensation for redevelopments
- B-20 Change of the policies related to land appreciation tax

Stage III: Construction Process:

- C-1* Change of environmental policies
 - C-2* Change of the regulation in specifying construction procedures
 - C-3* Change of the policy regulating the construction quality standard
 - C-4* Change of the tax policy on real estate development
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C-5*	Change of the policy on construction contract terms
C-6	Change of the construction tendering policy
C-7	Change of the policies related to project finance for the construction (increase of construction costs)
C-8	Change of the policies on bank loan for construction (increase of capital costs)
C-9	Change of the policy related to construction safety

Stage IV: Property Disposal and Management

D-1*	Change of the tax policy on real estate sales
D-2*	Change of the pre-sale policies, such as the terms and conditions for pre-sale
D-3*	Change of the policies related to sales, such as guarantee, housing fund and policies
D-4*	Change of the financing policies related to mortgage term, ratio and interests
D-5*	Change of the policy for property transaction area
D-6	Change of the building ownerships policies, such as confirmation of the ownership and execution
D-7	Change of the policies related in the building ownership, such as condition or regulations on transfer of the ownership
D-8	Change of the local policies related to special projects (affordable housing), such as the guarantee returns
D-9	Change of the real estate sales policies related to local or overseas transactions
D-10	Changes of the policies related to property management
D-11	Change of the policy regulating sale price and the transaction methods

In line with Table 8.1, Tusi (2003) have conducted a comprehensive study on the major five major policy risks by using the comprehensive impact degree (CID) model. The results on top policy risks are highlighted with “star” (*) in each of the real estate development process, which are marked in Table 8.1. For example, during the first stage, “change of national economic policy (A-2)” is identified as a major policy risk.

A series of interviews are conducted by a pilot study. The pilot study is to investigate the applicability of the survey findings conducted by Tsui (2003). The aim of the interviews is to identify whether these top risks are significant, and how many typical risk management strategies are conducted in the practical business activities for real estate developers in China.

The risk “change in environmental policies (B-1)” is identified as the top major policy risk in the second stage. Environmental protection becomes increasingly important in the process of implementing real estate development. However, the change of the relevant policy can bring significant loss to developers. An example was discussed during the interview with one of the business manager of Gemdale Development Enterprise. A joint venture company acquired the land use right for developing low-rise residential zone in Shenzhen, located near a reservoir. After a year of acquisition, the environmental protection policy was revised by the local government, by which the project was not allowed to process forward and had to be cancelled just before the commencement of the construction. The government offered the developer the land in another location. Although the developer negotiated successfully in the end with the Government with obtaining the land in another location, the good time opportunity for the project development was missed, and a large amount of the capital for the land cost was hold for a long period, which caused extra interests cost.

During the third stage in the real estate development process, the risk “change of the policy regulating the construction quality standard(C-3)” is one of the major policy risks. This can be echoed by an example occurred in Vanke in Shenzhen. Shenzhen government changed the regulation related to the evaluation for construction quality in 2002. By the new regulation, the responsibility for supervising construction quality was transferred from government to developers. In this context, Vanke need to re-consider their property product quality control system in order to be in line with the policy changes of regulating construction quality standard.

The risk “Change of the policy on residential product sales (D-2)” was identified as a major policy risk during the fourth stage (property disposal) during project

development process. There are many tax and charge items imposed to the development of a real estate project in China. The level of these taxes or fees is often changed or adjusted by the local governments, thus loss can be induced from these policy changes to real estate development. The interview discussion revealed another example for Henda Group. In 2000, some local governments raised the tax of real estate development from 24% to 33%. Although the developer argued that the project was initially approved as an Anju Project Scheme (under Affordable Housing Scheme), which should pay a lower tax rate (about 24%), the government responded that the policy was changed, and insisted that the developer should pay the new tax rate. As a result, the income generated from the project dropped by over 9%.

8.4.2 Risk management strategies

Previous literatures have introduced typical risk management strategies (Shen *et al.*, 2001; Wen and Liu, 2006; Li *et al.*, 2004; Liu, 1998; Liang, 1999), which includes risk avoid, risk transfer, risk mitigation and risk acceptance. Similarly, there are several risk response strategies for developers to respond to the major policy risks in the process of real estate development.

Risk avoid

Where the risk level is very high, risk can be avoided by rejecting the activity with which the risk is associated, such as rejecting contract, rejecting the development of alternative design or redesign of the project, or withdraw from tendering for a development, etc. Meanwhile, not entering a business to avoid the risk of loss also avoids the possibility of earning profits. This is particularly true for decision-makers in real estate business. For example, it is a risky decision to acquire a large amount of land for real estate developers at the financial crisis period.

Risk transfer

Risk transfer is widely used risk management strategy. For example, government offices may transfer risks to developers; developers may transfer risks to contractor or designer such as by lump sum or project management contracts, and contractor to subcontractors, such as labor-only supply. The ability to risk transfer liability indicates an organization's competitiveness.

Risk transfer from developers shall aim to share risks with other parties. Risk share means to allocate ownership to a third party who has a better chance of achieving the required results. Joint ventures, teaming or partnership arrangements are typical examples for different types of real estate developers that can involve explicit risk transfer among the various parties, and this is usually captured in the contractual relationship between them.

Risk mitigation

Risk mitigation aims at reducing the probability or impact of a risk to an acceptable level. The probability/impact should be mitigated before the risk takes place. Thus avoiding dealing with the consequences after the risk had occurred. In the application, most of the risks concerned cannot be avoided, and transfer is of limitation. Therefore, risk mitigation becomes an important strategy. Risk mitigation aims to find solutions to deal with individual risks by examining particular causes. For example, real estate developers can implement a new course of business action that will reduce the risky problem, e.g. adopting less complex processes, or choosing a more stable supplier. For another example, completing the property project earlier than the schedule so that the probability of the risk occurring is reduced.

Risk Acceptation

Risk acceptance strategy is usually adopted for residual risks. Residual risks are those which remain after the application of other strategies such as avoidance, transfer or mitigation responses. The risks to be accepted are usually those minor risks where responsive strategies may not be cost-effective compared to the possible cost of bearing the risk impact. For example, the most usual risk acceptance response is to plan contingencies for those risks to be accepted, such as time and extra costs for covering the possible effects from those risks. In this context, it is well appreciated for real estate developers, which can cope with the need to operate under conditions of uncertainty, and will allow residual risks to be accepted without disrupting the execution of the project. In line with these response strategies, the selection of them should be driven by consideration of the type and nature of the policy risk, manageability and amenability to reduction or control, the degree of severity of impact, available resources and cost-effectiveness.

In order to gain the competitiveness improvement, there is a need to find effective risk management strategies for responding to the top policy risks as mentioned above. In this context, three case studies are conducted to demonstrate how these risk management strategies are implemented in real practice. In order to find out the most effective risk management strategies, a series of interviews are conducted in these three case studies to identify the applicability of these strategies for managing the top policy risks as mentioned in Table 8.1.

8.5 Managing the major policy risks to improve competitiveness

The data used for the analysis in this section are collected from three real estate developers. The three cases are selected from the TOP 10 real estate developers in

China. The cases include Vanke real estate group (I), Gemdale development enterprises (II), and Henda Real estate Group (III). Each of the representative real estate projects for those three companies is selected for further discussions on how they adopt risk management in improving their competitiveness. The interview discussions in each case study lasted one and a half hours, involving full discussion between the researchers and the project managers who have been working on the company for a long period. The interviews were conducted when the survey was taken for the analysis in Chapter 4.

The key questions raised in the interview discussions include: what are the major policy risks occurred to the company; what competitiveness improvement the developers can gain by taking the various types of risk management strategies?

According to the data from the discussions, the three companies have crossed various risks in different stages including project plan, design and construction preparation, construction and property sale and management. For example, the major policy risks occurred to China Vanke at the plan and construction preparation stage include ‘change of the financial interest rate policy’, ‘change of land supply policy’, ‘change of policies on land transaction approach and change of the policies on project planning parameters’. Vanke has strong human resources team and considerate entrepreneurs, which can help them make risk avoid, transfer and mitigation strategies to respond to these policy risks. The interviews discussions suggest that these risk management strategies help improve the company’s capability to expand finance channels and manage cash liquidity.

The above findings can be listed in Table 8.2, the Codes in the tables represents various policy risks, which can be referred to Table 8.2 in this Chapter. To manage

these risks, different organizations have adopted different strategies effectively, which have also been summarized in Table 8.2.

The data in Table 8.2 demonstrate that the policy risks vary in different project stages and between different companies. In order to respond to various risks, companies adopt various risk management strategies. As echoed in the discussions with the business leaders, the risk management strategies adopted in their organizations did bring them competitiveness improvement in different perspectives. The findings from these discussions help real estate developers to focus on those major risks in their business.

Table 8.2 The Policy risks and risk management strategies for real estate developers

	<i>Case I</i>		<i>Case II</i>		<i>Case III</i>	
	Policy risks	Risk management strategies	Policy risks	Risk management strategies	Policy risks	Risk management strategies
Plan& construction preparation	A-1; A-2; B-2; B-8	Risk transfer; risk avoid; risk mitigation	A-2; B-2; B-5	Risk transfer; risk avoid; risk mitigation	A-2; A-3; B-3;B-5	Risk transfer; risk avoid; risk mitigation
Construction	C-1; C-3; C-4	Risk transfer; risk mitigation	C-5; C-3; C-1	Risk transfer; risk mitigation	C-1;C-5	Risk transfer; risk mitigation
Operation& Management	D-1; D-3; D-2	Risk avoid; risk transfer; risk mitigation	D-2; D-4; D-1	Risk transfer; risk mitigation	D-5; D-4; D-2; D-1	Risk transfer; risk mitigation

It is also worth noting that, according to the discussions with professionals, some policy risks appear frequently to all the three cases, but they have not been given sufficient attention. They could cause significant impacts on the real estate business. For example, in the plan and construction preparation stage, the risk “change of national economy policy” is considered having small chance to happen, but it did happen and caused significant losses to all three developers investigated. The Chinese

government reviewed and adjusted the national economy policies in 1993, 1998, and 2003 respectively. These adjustments affected the entire real estate sector mainly through tightening the capital channels and restraining bank loans for real estate development for real estate development projects. These policy changes have brought large loss to the three companies. This is echoed in a reported that policy changes have resulted in many bankruptcies particularly among those small developers (China real estate business, 2007). Nevertheless, by conducting risk avoid strategy, China Vanke made careful investigation and prediction on the national policy plan, involved only few projects, and rejected many real estate development opportunities. Consequently, the real estate giant avoided the risk of loss during that period. This contributes to the action of a group of entrepreneurs in the organization. It also indicates importance of the “entrepreneurship” as a core indicator for developers’ competitiveness. If the business leader of the real estate developers can predict the policy risk beforehand, the possible loss can be prevented, which in turn make competitiveness improved.

On the other hand, in the construction stage, Gemdale development enterprise, the Case II, is employed to demonstrate the research findings in this stage. The major policy risks encountered by the enterprise during this stage include “change of the policy regulating the construction quality standard”, “change of environmental polices” and “the change of the policy on construction contract terms”. In line with these policy risks, Gemdale conducted risk mitigation and risk transfer strategies to respond to these risks. The Manager in the Gemdale Company opined in the discussion that they can focus on improving the competitiveness aspect, such as the ‘horizontal cooperative mechanisms with related partners’ and ‘production cost planning and control capabilities’.

It appears that the risk ‘change of environmental polices’ occurred in the three case studies. Take one property project of Gemdale as an example, in line with the world-wide promotion of environmental protection, which leads to the implementation of various environmental policies by the local government in Shenzhen. However, it is appreciated that environmental policy in China has frequent changes and revisions, which present significant risks to the property project of Gemdale particularly during construction stages. In order to mitigate this risk, business managers of the company implement the risk transfer strategy to share the potential risk with other stakeholders, such as the contractors, the design consultant company and the consumers by way of signing contract. Therefore, the social responsibility burden can be shouldered collaboratively among all the stakeholders. By adopting this strategy, real estate developers can gain their corporate brand reputation and establish good relations with related partners, thus the relevant competitiveness can be improved.

In the property management stage, Henda Real estate Group, the Case III, is employed to show the research findings in this stage. The major policy risks during this stage for Henda include “change of pre-sale policies”, “change of polices on mortgage term, ratio and interests” and “change of the policy regulating sale price and the transaction methods”. Henda Real estate Group adopted risk mitigation and risk transfer strategies to respond to these risks. The Manager in the Company opined in the discussion that they could focus on improving the competitiveness in various aspects through managing risks, such as the ‘value chain integration capability’ and ‘marketing schedule control capability’. For example, as it is echoed with the interview with the general manager of Henda Company, the sales department of the company can make an appropriate marketing schedule plan before the property

products are put into market. In responding to the possible policy changes in regulating sale price and the transaction methods, the marketing schedule plan can be employed in advance to manage and mitigate the risks during the selling process.

Furthermore, the risk ‘changes of the policy regulating sale price and the transaction methods’ was encountered in all three case studies. Take Henda Company as an example, they developed a multiple-storey residential building. Having completed the construction of the project, the developer was instructed to control the property sales price within a certain range by the government as the sales price at that moment is overheated. However, if the manager of the company revealed that they have actually paid a higher cost to buy the land, the policy changes brought considerable amount of capital loss. In this context, the decision-makers of the Company decided to adopt risk mitigation strategy by taking the lead to reduce the sales price to recover their funds quickly and then bought another parcel of land at a relative lower price in the downturn market. By selling the parcel of land in time, the Company recouped their capital in hand. It is revealed that the Henda Company has not only gained their corporate reputation in the market, but also improves their capability and competitiveness in managing cash liquidity. All of these aspects have contributed to the competitiveness improvement, as evidenced by the interviewees in this study.

8.6 Summary

The real estate business environment in China is dynamic. The changes and revisions on the relevant policies are expected. These changes or revisions are necessary in order to regulate and supervise the development of the real estate market. However, such dynamic policy environment leads to the presence of risks in the process of

developing real estate projects. Various risks present in different level of significance in different project development stage.

By understanding the major policy risks in the previous literatures, real estate developers can conduct various risk management strategies to achieve the competitiveness improvement in the real estate development process. It is noted that a growing number of real estate developers have realized the benefits of adopting risk management strategies in improving their competitiveness, as evidenced by the three cases examined in this study. The discussions on the case studies demonstrate that these risk management strategies are effective in help the real estate developers improve their competitiveness.

CHAPTER 9 CONCLUSIONS

CHAPTER 9 CONCLUSIONS

This chapter presents the conclusions from conducting this research, the contribution of the research to knowledge, appreciation to the research limit, and the recommendation for further research.

- *9.1 Major research findings and conclusions*
- *9.2 Contributions of the Research*
- *9.3 Limitations and Future Research*

CHAPTER 9 CONCLUSIONS

This chapter presents overall conclusions of this study, and describes the contributions to both research and practical applications in the real estate sector. The potential areas for future research are also discussed.

9.1 Major research findings and conclusions

This section summarizes the major research findings in referring to the research objectives defined in this study. The aim of this study is to develop a model to communicate the competitiveness for real estate developers. The objectives including (1) examining the dynamic characteristics of the business environment for real estate developers in the Chinese market; (2) investigating competitiveness indicators for communicating real estate developers' competitiveness; (3) identifying the core competitiveness indicators (CCIs) for real estate developers in different business development stages; and (4) applying the CCIs for developing key strategies for competitiveness improvement for real estate developers. By pursuing these research objectives, the following major conclusions can be drawn:

9.1.1 Development and characteristics of the Chinese real estate industry and developers

Since its adoption of the “open-door” policy and economic reform in China, the world has witnessed the impressive high speed growth of the Chinese real estate industry. The fast speed growth of the real estate industry is due to several drivers, typically including the fast economic growth, the rapid urbanization process, the favorable policies to real estate business activities, the great demand in the market; the technical capacities, and the huge amount of investments to the industry from overseas. All

these contribute to the distinguished characteristics of the real estate industry. These characteristics can be observed from several key dimensions such as the fast transformation of business external environment and the fierce competition within the real estate industry environment. The external environment for real estate business is characterized by a set of complex, rapidly changing and interactive forces that affect real estate developers' performance in the market. These dynamic forces cross a wide range of aspects including economic, technological, policy, legal, social, and ecological environment. The competition intensity within the Chinese real estate market is influenced by the five competition forces proposed in Porter's theory, including threat of new entrants, competitive rivalry within industry, bargaining power of clients, bargaining power of suppliers, and threat of substitute of products.

On the other hand, the Chinese real estate developers have also shown special characteristics in its industry environment. The real estate business is capital and resource intensive. Most of the small and medium size developers operate their business in local region. As real estate businesses engage complicated and long contractual process with various other businesses, there are a lot of uncertainties faced by developers, thus their business is subject to high risk although the good expectation of high return.

The real estate market in China is not yet mature in comparing to that in the West. The market has less than 30 years' development history. Most developers have just experienced start-up and growth stage. They engage a wide range of activities along a real estate value chain. Developers in China have to work with many other stakeholders, particularly, with many government offices. Developers' competitiveness presents in the whole value chain which consists of project feasibility

study stage, construction preparation stage, construction stage, marketing and sales stage, and property management stage. Developers' competitiveness is also from the effective management and relationships with other stakeholders.

9.1.2 Identification of competitiveness indicators for communicating real estate developers' competitiveness

The indicators for assessing developers' competitiveness with reference to the Chinese real estate market have been established by using a guiding framework. The framework integrates five essential elements in presenting the competitiveness of real estate developers, including external and internal environment, resources, capabilities, dynamic mechanism, and strategies for improving the competitiveness. From the perspectives of these five elements, it is found that developers' competitiveness changes when businesses develop in different stages. Whilst there are a large number of competitiveness indicators proposed in literatures, this research classify the competitiveness indicators for real estate developers into three categories: resources related capabilities related and management mechanism related, which have been presented in Chapter 5. These indicators are formulated in a hierarchy system, providing a integration for understanding a real estate developer's competitiveness.

9.1.3 The core competitiveness indicators (CCIs) for real estate developers

The understanding on the competition environment and general competitiveness indicators for real estate developers in the Chinese real estate market has led to the identification of core competitiveness indicators. It is essential to appreciate these core indicators as they can guide the management efforts to these core areas in order to improve business competitiveness. Questionnaire survey method was adopted in this study in identifying these key indicators. The weakness of traditional approach for

analyzing key factors from using questionnaire survey data is appreciated, where the comprehensiveness of the survey data is not fully appreciated. The individual respondents' subjectivity and fuzziness involved during survey process have not been incorporated in the traditional method. This study extends the traditional approach to combining Monte Carlo Simulation technique with Fuzzy Set theory, and weakness of the traditional methods has been mitigated. The results of CCIs identification are considered effective.

By using the proposed integrative approach, 36 CCIs are identified during start-up stage, and 6 for growth stage. The identification of the CCIs indicates that developers at start-up stage are indifferent to what are the key competitiveness areas thus they consider almost all areas important. This can be explained as that developers do not have sufficient knowledge and experience about the practice of real estate business and which aspects are more important than others. However, developers start to realize the importance of focusing on few areas after they consolidate their business start-up stage, thus they can identify much less areas (6 core indicators) as core competitiveness areas in comparing to the stage when they just enter into the market. This demonstrates that developers have gone through a learning-curve by which they become more knowledgeable about the practice of the market and more experienced on the operation procedures for developing a real estate project. These six CCIs are considered essential to present a developer's competitiveness in the Chinese real estate market, including annual land reserves, corporate brand reputation, access to a diverse range of capital, entrepreneurship opportunity, superior strategic management capacity, risk management capability (response to policy and system changes), and development of green strategy to gain the reputation of social responsibility. The findings on the core competitiveness indicators for two business development stages

indicate that the developers' understanding on the concept of 'core competitiveness' develops when their business processes forward.

9.1.4 Development of key strategies for competitiveness improvement by applying CCIs

Whilst there are various strategies for helping real estate developers to improve their competitiveness, this study suggests two key strategies: green development strategy and risk management strategy. Adopting green elements can contribute to improving real estate developers' competitiveness in various aspects. For example, green elements can help developers differentiate their products thus provide unique products to the market. It is also found that adopting green elements, real estate developers can achieve the cost reduction in both construction and operation of products. Developers can gain favorable land prices, acquire finance through more channels, and obtain the green brand reputation when they adopt green development strategy. Furthermore, this study suggests that the implementation of green strategies requests for various management mechanisms including government policy, community engagement and stakeholder involvement, education and training.

On the other hand, risk management strategy is found an effective strategy for improving organizational competitiveness. In particular, effectively managing policy risk is considered important business strategy, which to improving real estate developers' competitiveness. Risk management strategy can help developers assess the consequence of various policy risks and take due actions for mitigating their consequences by the means of risk response, risk avoid, risk transfer and risk share approach. Through these risk management methods, real estate developers can control

and manage various policy risks during the different stages in real estate development process, which in turn contribute to the competitiveness improvement.

9.2 Contributions of the Research

This study provides Chinese real estate developers with knowledge for analyzing their competitiveness and a systematic approach to guide the identification of their core competitiveness. China's accession to the WTO in 2001 marks the beginning of a new era of China's opening-up to the world. This development benefits the Chinese businesses including real estate enterprises from participating more actively and freely in international business activities. The development of China's accession to WTO on the other hand presents challenges to the Chinese domestic real estate developers as increasing foreign products and services have been entering into the China real estate market. The opportunities and challenges encountered by the Chinese real estate developers request them to adequately understand their competitive position. Therefore, sharpening their competitive advantage is the key approach for Chinese real estate developers in outperforming their rivals in meeting up these opportunities and challenges.

This research enriches the knowledge of organizational competitiveness with particular reference to real estate developers. Whilst there is a huge body of knowledge available on the subject of competitiveness, the theories on competitiveness and competitiveness assessment indicators for adoption in real estate profession are insufficient and fragmental. The previous studies have not incorporated the dynamic characteristics of real estate business environment when assessing real estate firms' competitiveness. This study provides a systematic approach for understanding real estate developers' competitiveness and demonstrates that

developers' competitiveness should be assessed in a dynamic perspective. The development of "Core Competitiveness indicators" in this study can be used to guide the improvement of developers' competitiveness, and communicate developers' competitiveness to the market more efficiently.

Furthermore, by investigating the characteristics and development of China' real estate industry and the developers in the industry, this study has added to the body of knowledge on the China's real estate market. The adoption for the alternative method for identifying core competitiveness indicators in using survey data provides a method which can mitigate the weakness of the traditional method. Traditional method for analyzing core indicators from using survey data does not incorporate the influence of individuals' subjectivity and fuzziness in their responses. This weakness is mitigated by introducing a new method in this study which integrating the advantages of Monte Carlo Simulation technique and Fuzzy Set theory. The effective identification of CCIs leads to the investigation on key strategies for competitiveness improvement, including green development strategy and risk management. In this content, this study adopts a series of methods organized in a systematic way, which make the research agenda fluent and the results more robust. All these efforts provide valuable basis for continuing future studies on the subject of organizational competitiveness.

In addition, the research findings in this study on the CCIs for real estate developers and the key strategies for competitiveness improvement can help real estate developers in particular those from overseas to understand their competitiveness in the Chinese market thus preparing them effectively when considering on competing particularly in the real estate business in China. On the other hand, these findings provide a valuable framework of reference for studying the subject of developers'

competitiveness in other regions or countries. Researchers can conduct comparative studies between Chinese and other countries' real estate industries by referring this study. Practitioners can gain insights from this study into the real estate competition practices in China.

9.3 Limitations and Future Research

It is appreciated that there are limitations in this study, which concern largely with data availability and the limitation of time. Firstly, data collection and analysis in this study are referred to the Chinese real estate industry. Thus, the analysis in this study is limited to the Chinese real estate sector. Secondly, competitiveness is a relative concept. The application of the competitiveness indicators particularly CCIs is only effective when comparing different firms. However, due to limited time, the analysis in this study has not been extended to the examination of the application of CCIs between different real estate developers. Finally, the significance of core competitiveness indicators in this study was analyzed by investigating two key strategies that enhance the competitiveness of real estate developers. This analysis could be elaborated by employing more practical cases. This limitation is recommended to be addressed in future research.

For echoing the above limitations existed in this study, the following areas are recommended in future research in this field. (1) The same research issues about identifying the core competitiveness indicators and applying the key strategies for competitiveness improvement can be conducted in different real estate markets. Such research can further add knowledge on the subject of organizational competitiveness. (2) a further research is recommended to investigate the relationship between the business performance and competitiveness of real estate developers by

employing the CCIs identified in this study. This can enhance the understanding the relative competitive positions of various real estate developers in the market. (3) Further research could be conducted on examining the significance of the core competitiveness indicator identified in this study by employing more practical cases.

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