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Exploring Sources of Competitive Advantages in E-business Application in Mainland Chinese Real Estate Industry

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ABSTRACT

One of the key issues in e-business research is how established companies can gain competitive advantage by exploring e-business. Despite the interest in e-business applications by traditional firms, few empirical studies have been carried out to look at how ‘clicks-and-mortar’ approaches offer competitive advantages, especially from a specific industry perspective. This study investigates the key sources of competitive advantage gained from e-business applications by Chinese real estate developers and whether the value chain theory and its related theories can explain this phenomenon. By using a qualitative case study approach, the study shows that the value chain framework is useful to identify and categorize possible e-business application areas. Moreover, this categorization makes identification of key sources of competitive advantage explicit. However, this framework cannot fully explain the success of e-business applications nor the realization of intended motivations. Hence, further research and work are needed to make the value chain model become an easily-used, practical guideline for e-business implementation.

Key words: e-business, competitive advantage, value chain, real estate industry

1. INTRODUCTION

This study investigates the key sources of competitive advantages gained from e-business applications made by Chinese real estate developers and whether the value chain theory and its related theories’ can explain this phenomenon.

One of the key issues in e-business research is how established companies can gain competitive advantage by exploring e-business. Despite the interest to e-business application by traditional firms, few empirical studies have been carried out to look at how ‘clicks-and-mortar’ approaches offer competitive advantages, especially from specific industry perspective (Steinfeld *et al.*, 2002).

Therefore, the aim of this research is to address this gap in the current literature by investigating sources of competitive advantage gained from e-business adoption by established real estate developers in Mainland China.

This aim can be broken down into the following questions:

- 1) What are the key sources of competitive advantage gained from e-business application by real estate developers?
- 2) How effectively can the value chain model capture the key sources of competitive advantage?
- 3) Does the transformation to value chain made by some researchers pass the empirical tests in specific industry?
Or,
- 4) Can any new framework/theory of transformation arise from empirical data analysis?
- 5) Do any links exist between value chain framework explanation to sources of competitive advantage in e-business and other alternative explanations?

2. RESEARCH METHOD

A case study and qualitative research approach will be adopted in this research. Following the suggestions given by Yin (1994), this research design will be based on multiple cases and multiple evidences.

Large spatial diversity between Chinese real estate developers, and time and resource limitations would suggest a strategy initially focused on established real estate development firms whose main activities focus on three geographical locations, namely Beijing, Shanghai, and Guangdong Province, because these cities are the most prosperous housing markets in Mainland China.

According to the e-commerce definition, that is “e-commerce is the sharing of business information, maintaining business relationships, and conducting business transactions by means of tele-communication networks” (Zwass,1996), adopted in this research, we define established real estate developers with e-business application as the company who conducts one or more than one of the following activities:

- the buy-side e-business transactions with suppliers;
 - the sell-side e-business transactions with customers;
 - the use of Internet technologies within the firm.
- Here, the key business activities refer to the nine generic categories of interdependent activities which compose a firm’s value chain. For example, Floris *et al.* (2001) give an insight into the reach of e-business technologies into the value activities. (Shown in **Figure 1**)

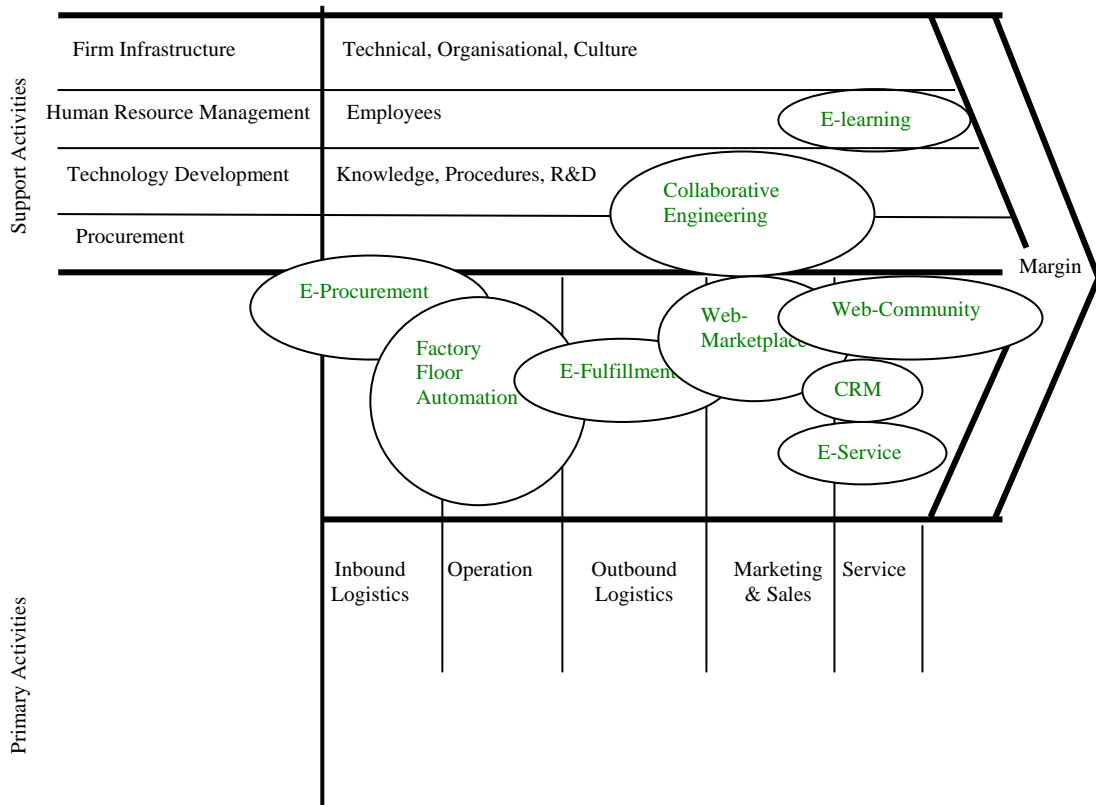


Figure 1 E-business technologies applications in the value chain

Source: Floris *et al.* (2001)

Cases were identified by combining the databases of real estate developers with first-grade qualification, top ten real estate developers in 2002 and top 35 public real estate development companies in 2001. Additional criteria were used which identified companies with continuously better than average performance, an e-business application, and geographic focus. Twenty companies were initially chosen and their websites scanned to confirm whether they are using e-business. The initial finding is that most companies in the database only use websites as e-brochures and only a few companies have used e-business actively. This narrows down the cases into five companies, who are located in Beijing or Shenzhen.

The data analysis is influenced by grounded analysis, four principles of high quality analysis given by Yin (1994): namely use all relevant evidence, consider all

major rival interpretations, address the most significant aspects of the case and use your own prior expert knowledge and value chain theoretical framework.

3. RESULTS AND ANALYSIS

The five case companies are Mainland China-based real estate development companies, among them three in Beijing and two in Shenzhen. All of the companies are well established in the real estate industry with property development as their core businesses and have, to some extent, tapped e-business. Some key features of the case companies and their use of e-business are summarised in **Table 1**.

A cross-case comparison on the key features from each case for is shown in **Table 2**.

Table 1 Main features of the case companies

Company	Market segmentation	Organizational structure	E-business application
I	Mainly middle-end; partly high-end Focuses on multiple cities with marketing expansion potential	Centralizes management cross regions	1) Marketing promotion and advertisement; 2) E-procurement; 3) Intranet for email system; 4) Automation of internal management processes.
II	Mainly middle-end; partly high-end Focuses on Shenzhen, Shanghai, and Beijing with marketing expansion potential	Centralizes management cross regions	1) Marketing promotion and advertisement; 2) Business to Employee platform for knowledge management; 3) Automation of internal management processes; 4) Customers' e-forum.
III	Mainly middle-end; partly high-end Focuses on Beijing with marketing expansion potential		1) Marketing promotion and advertisement; 2) Automation of internal management processes; 3) Secondary housing market.
IV	High-end Focuses on multiple cities with marketing expansion potential		1) Marketing promotion and advertisement; 2) B2C platform to allow customers order houses.
V	Mainly low and middle-end; partly high end; focuses on multiple cities	Independent management by subsidiary companies	1) Marketing promotion and advertisement; 2) Intranet and financial system.

Table 2 Cross-case comparison

Case	Definition to e-business	E-business adoption motivations	E-business application	Advantages gained from application	Main concerns of E-business adoption
I	No clear idea but thinks it has no big difference with preceding information systems	1) To Share information; 2) To improve operation efficiency; 3) To reduce procurement cost; 4) Marketing promotion.	1) Marketing promotion and advertisement; 2) E-procurement; 3) Intranet for email system; 4) Automation of internal management processes.	1) Better information sharing; 2) Reducing purchasing cost; 3) Facilitating employee training; 4) Standardising operation process; 5) Reducing redundancy;	Integrate different information systems adopted by different functional departments.
II	E-business including Web-based transaction. Definition is not important to them.	1) To Share information; 2) To manage customer relationship and achieve strong interactions with customers; 3) Marketing promotion.	1) Marketing promotion and advertisement; 2) Business to Employee platform for knowledge management; 3) Automation of internal management processes; 4) Customers' e-forum.	1) Reducing redundancy; 2) Facilitating employee training; 3) Promoting innovation; 4) Better management through customer monitoring; 5) Better information sharing.	
III	E-business including Web-based transaction.	1) Marketing promotion; 2) To improve management efficiency;	1) Marketing promotion and advertisement; 2) Automation of internal management processes; 3) Secondary housing e-market.	1) Better information sharing; 2) Facilitating strategy formulation.	Integrate different information systems adopted by different functional departments.
IV		To facilitate the implementation of the company's management concepts	1) Marketing promotion and advertisement; 2) B2C platform to allow customers order houses.	1) Reducing business risk. 2) Strong interaction with customers.	
V	E-business is a new technology facilitated tool of transaction and providing transaction-related service	To redefine the value chain and standardizing real estate development process	1) Marketing promotion and advertisement; 2) Intranet and financial system.		Organization-al structure makes difficult to implement e-business

The following key issues emerge from the analysis of the cases.

1) Main e-business applications by Chinese real estate development companies;

- 2) Main motivations and benefits of e-business application;
- 3) The main hurdles of e-business application.

Main e-business applications by Chinese real estate development companies include e-procurement, automation of the internal management process and marketing efficiency.

The companies' motivations for e-business adoption initially arise from trying to solve key management problems, especially operational problems, by using e-business applications such as e-markets, intra- or interorganizational systems, and providing customer service. Another common motivation identified is sharing information between internal users (shown in **Table 2**). Additionally, the adoption of information systems is also motivated by cost saving. A further motivation is to achieve strong customer interactions.

Table 2 shows the main advantages gained from e-business application.

This advantages can be categorized according to Porter and Millar (1985)'s statement that information technology is permeating the value chain at every point by:

- 1) transforming the way value activities are performed;
- 2) transforming the nature of the linkages among value activities;
- 3) affecting competitive scope.

Figure 2 illustrates the main transforming of the way value activities are performed.

By adopting e-business to perform these activities, the case companies can achieve the competitive advantages listed in **Table 2**. **Table 3** illustrates the relationship between value activities and competitive advantages achieved.

The main problems of e-business application include internal interorganizational systems integration and the impact of organizational context such as organizational structure, management style and the customer base.

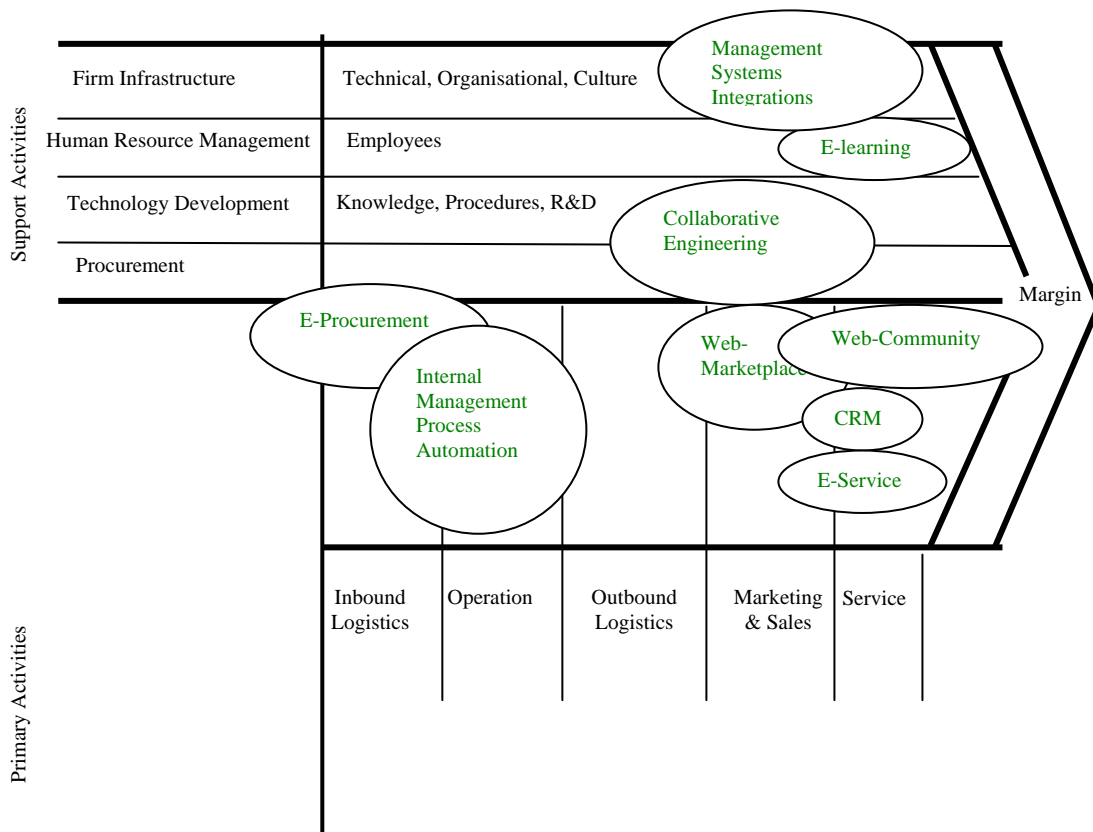


Figure 2 E-business technologies applications in the value chain in Chinese real estate industry
 Source: Adapted from Floris *et al.* (2001)

Table 3 Relationship between value activities change and competitive advantages achieved

Value activities	Adopted by companies	Competitive advantages achieved	Advantages achieved by companies
E-procurement	I	1) Reducing purchasing cost; 2) Standardizing operation process which leads to simplifying complex internal processes and reducing costs; 3) Reducing redundancy.	I
Internal management process automation	I,II,III,IV, V	1) Better information sharing; 2) Reducing redundancy.	I,II,III
Web-marketing	III (has intention to adopt, has not adopted yet)		
Service including e-service, CRM, Web-community	I,II, IV	1) Better management through customer monitoring; 2) Strong interaction with customers; 3) Reducing business risk.	II—better management; IV—strong customer interaction and reducing business risk
E-learning	I,II	1) Facilitating employee training; 2) Reducing redundancy.	I,II
Management systems integrations	III	Facilitating strategy formulation through better information sharing.	III

4. CONCLUSIONS

As **Figure 2** shows, in general, the value chain framework is useful to identify and categorize possible e-business application areas. Moreover, this categorization makes identification of key sources of competitive advantage explicit as **Table 3** has illustrated. However, this framework cannot fully explain the success of e-business applications and the realization of intended motivations for example the impacts of organizational structure, management style, and the customers base.

Floris *et al.* (2001)'s framework is instructive in asking interview questions about possible e-business applications and identifying possible e-business application areas. However, one common application, namely automation of the internal management processes, is not stated in this framework although it is similar to Factory Floor Automation.

Evans and Wurster (1999)'s suggestion of using e-business to resolve the trade-off between reach and richness helps in interpreting Company IV's e-business applications and competitive advantage gained from these applications.

Steinfeld *et al.* (2002) and Daniel and Grimshaw (2002)'s frameworks help in identifying and interpreting the motivations of e-business application and benefits achieved from e-business adoption.

Based on Floris *et al.* (2001)'s framework, **Figure 2** gives categorization of e-business applications adopted by established, big Chinese real estate development companies.

The findings illustrated in **Table 3** reinforce Porter (1985, 1998)'s finding that key sources of competitive advantages come from: redefining the role of traditional activities, optimising the linkages, and choosing competitive scope. This finding tends to support Porter (2001)'s claims that the fundamentals of economics and strategy have not changed and the underlying assumption that Internet is the latest stage in the ongoing evolution of information technology is valid.

However, further research and work are needed to make the value chain model become an easily-used practical guideline for e-business implementation. Practically, few case companies use the value chain model as theoretical instruction for their e-business experiment although Company I has used value chain theory to redefine its value chain but not for e-business application purposes. This is partly because of the reason described by Stabell and Fjeldstad (1998) that the value chain model is more suitable for the analysis of production and manufacturing firms than for service firms where the resulting chain does not fully capture the essence of the value chain. Another reason may be more explanation work needed to be done to make the value chain model more easily understood by enterprise managers.

Facilitated by government policy, as the Chinese real estate market becomes more and more transparent, it is anticipated that e-business will play a more and more important role in helping companies to achieve these three advantages. However, this conclusion is contrary to views given by most of the interviewees. The main reason for this is that they are working with different definitions of e-business. According to them, e-business must include Web-based transaction. However, in this

research, we would like to adopt the definition given by Zwass (1996): "E-commerce is the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunication networks."

In summary, through case studies, the study shows that the value chain is helpful and primary in terms of understanding the different kinds of e-business applications in the practical world.

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