

# Modeling the Success of Small and Medium Sized Online Vendors in Business to Business Electronic Marketplaces in China: A Motivation – Capability Framework

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## ABSTRACT

*This paper explores the performance of Chinese small and medium sized enterprises (SMEs) on Business-to-Business (B2B) electronic marketplaces (EMs). Based on a content analysis of 155 cases of high performing online Chinese vendors, this paper explains the success of SME online B2B vendors within a Motivation-Capability framework. This first generation of SME B2B online vendors proved highly motivated to increase sales and developed a set of Internet leveraged organizational capabilities to compete online, including capabilities for online marketing, product innovation, eCommerce management, etc. This study differs from traditional wisdom that online marketplaces will render Guanxi (a Chinese cultural phenomenon defined as close and pervasive interpersonal relationships, Yang, 1994) irrelevant since online marketplaces are perceived to be impersonal. In fact, Guanxi still matters online, but it takes new forms. This research offers important managerial implications for B2B SME online vendors on how to leverage EMs for higher performance.*

*Keywords: Digital Organizational Capabilities, E-Commerce Performance, Entrepreneurial Motivation, Guanxi, Resource Based View, SME Online B2B Vendors*

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## INTRODUCTION

Small and medium sized online vendors are SME business firms with annual revenues less

than RMB300 million that take advantage of electronic marketplaces to sell products/services and achieve organizational growth. In China, the number of online vendors has increased dramatically in recent years, due to both the heightened atmosphere for entrepreneurship and

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increased eCommerce awareness among SMEs. These SMEs are either existing firms that use the Internet as a complementary sales channel, or Internet start-ups that try to capture business opportunities leveraged by the Internet. The typical Internet applications that these vendors use include third party electronic marketplaces, company websites, and online Software as a Service (SaaS) (Lefebvre et al., 2005). However, the majority relies on electronic marketplaces because they have limited resources to build and promote their own websites (Gulledge, 2002).

This paper focuses on SME online vendors using B2B electronic marketplaces (EMs). B2B EMs are Internet based electronic platforms that facilitate transactions and interactions among companies. However, we do not focus on a specific EM, because most online vendors use multiple EMs so as to achieve the greatest possible market exposure. Focusing on a single, centralized EM would not allow us to track SME online performance in totality. Internet trading among businesses through any and all EMs is studied in this research.

Selling products through B2B EMs is different from selling in traditional marketplaces. The main benefit of the Internet is that it allows SMEs to market products at lower cost, while at the same time reaching many more customers. This helps them to overcome the constraints imposed by lack of access to Guanxi (a term similar to interpersonal relationships, Yang, 1994) that is embedded in local markets.

At the same time, SME online vendors face great challenges. First, the online business environment is more turbulent than the traditional market, in terms of demand uncertainty, higher price volatility, and quickly changing business requirements. Second, the transparent nature of online marketplaces and increasingly large number of participants make online product selling more competitive than in traditional markets (Zhu 2004b).

The productive use of EMs for selling purposes is not as simple as becoming a member of several EMs, and waiting for customer

contacts. However, a literature review reveals that most related research has only focused on SME adoption of eCommerce (Al-Qirim, 2005, 2007; Beckinsale et al., 2006; Chen & McQueen, 2007; Dholakia & Kshetri, 2004), and the adoption of B2B electronic marketplaces (Grewal et al., 2001; Son & Benbasat, 2007). These researchers have studied the driving forces and challenges for EM adoption that SMEs face, such as limited resources to use EMs, reluctance to change, lack of technology knowledge, and know how (Kartiwi & MacGregor, 2007; MacGregor & Vrazalic, 2006). Few studies have analyzed the SMEs' continued use of EMs, and their performance after adopting EMs.

In this research, we seek answers to the following question: What factors lead to the initial success of SME B2B online vendors? This question is addressed by building an integrated Motivation-Capability (M-C) framework to model the motivation and behavior of these vendors. The framework is grounded in the content analysis of SME online vendor success stories and an interpretation based on entrepreneurial motivation, resource based view, and Guanxi theories.

In this framework, we first introduce the concept of entrepreneurial motivation to explain the behavioral drivers of successful B2B online vendors. This contrasts with motivations that have been previously studied to explain the adoption of B2B EMs: legitimacy motivation grounded in institutional theory and efficiency motivation grounded in transaction cost theory (Grewal et al., 2001; Son & Benbasat, 2007). The concept of entrepreneurial motivation is highly relevant because, in China, B2B EMs are used by many entrepreneurs to launch or transform their own businesses. Even if new companies are not involved, the adoption of eCommerce can be considered a risky, entrepreneurial action.

Second, we argue that the Resource-Based View (RBV), can explain the performance of a firm through the heterogeneous resources and capabilities the firm owns (Barney, 1991), and

Table 1. Number of Alibaba users<sup>a</sup>

	Domestic	International	Total
2004	4,840,641	1,165,911	6,006,552
2005	9,019,214	1,949,741	10,968,955
2006	16,649,073	3,115,153	19,764,226
2007	23,194,402	4,405,557	27,599,959
2008	30,160,705	7,914,630	38,075,335
2009	36,154,669	11,578,247	47,732,916

Source: Compiled from Alibaba IPO Prospectus and Alibaba annual report<sup>b</sup>

(\* one company can have several registered accounts, so number of users is not exactly the number of companies)

(<sup>b</sup>: Since it is a public company, this information can be found directly on the Alibaba website, under investor relations (<http://ir.alibaba.com/ir/home/home.htm>)).

is relevant in building up the M-C framework to explain the performance of SME online vendors.

Finally, Guanxi theory is particularly interesting in the Chinese firm context. Guanxi is a web of close and persuasive personal relationships that a firm can leverage to achieve competitive advantage (Yang, 1994). It is a firm's strategic resource. Chinese businessmen have traditionally relied on Guanxi to do business (Davies et al., 1995). However, a major assumption in the current B2B eCommerce literature is that rule based, impersonal EMs do not cultivate Guanxi (Hsiao, 2003). This suggests that Guanxi is not a strategic resource for firms doing business online. However, this conclusion needs to be tested.

The paper proceeds as follows. First, the Chinese context is introduced since this research was conducted in China. Second, a literature review and theoretical background are provided. The research methodology is then discussed, followed by the results of an analysis of data gathered from 155 high performing Chinese online vendors, and a description of the M-C Framework. We then discuss the study's theoretical and managerial contributions in comparison with previous literature, and how cultural persistence exists online. The paper concludes with a description of the study's limitations and future research opportunities.

## THE RESEARCH CONTEXT: CHINESE B2B ONLINE MARKETPLACES

In China, the number of SMEs reached 42 million by 2006. 9% of these firms had adopted eCommerce, mainly through third party B2B EMs (CASS, 2008). Three EMs dominate in China: *Alibaba*, with more than 64% market share, is also the biggest marketplace in the world; while *Globalresources* and *Made-in-China* have approximately 7.5% and 6.5% of the market share, respectively (Analysys, 2009). However, the diffusion of eCommerce among SMEs in China is still relatively low. For comparison, in European Union countries, approximately 2/3 of SMEs were using eCommerce to procure materials or sell products in 2006 (CASS, 2008).

Nevertheless, the number of online vendors has increased dramatically in recent years. According to *iResearch*, a Chinese consulting firm, 17.02 million SMEs used B2B EMs in 2009, accounting for 42.6% of all SMEs (iResearch, 2010). One can also see this growing trend from *Alibaba* registered users, among which most are SMEs (Table 1).

The above statistics indicate that the number of SMEs using B2B EMs has increased dramatically in China since 2006. This, however, means that the competition among B2B electronic marketplaces has intensified.

## LITERATURE REVIEW AND THEORETICAL BACKGROUND

### Motivation and Use of B2B Electronic Marketplaces

A significant body of research in psychology has supported general motivation theory as an explanation for behavior (Vallerand, 1997). Motivation is goal directed arousal, which has prolonged influence on behavior. The motivation issue has been studied both at the individual (e.g., Davis et al., 1992; Venkatesh, 1999; Venkatesh & Speier, 1999) for consumer technology adoption research) and the organizational level (e.g., Grewal et al., 2001; Son & Benbasat, 2007). We are interested in organizational motivation in this research. The literature on organizational startups suggests that the motives, processes and structures that firms have at the time of their inception have a long-lasting and perpetual influence on their behaviors (Baum & Oliver, 1992; Schulz, 1998). Accordingly, the motives of a firm for entering the eCommerce field will have a sustained influence on its eCommerce operations and performance.

Based on transaction cost and institutional theory, two types of motivations in the adoption and use of B2B electronic marketplaces have been identified: efficiency and legitimacy motivation (Grewal et al., 2001; Son & Benbasat, 2007). Efficiency motivation refers to a firm's pursuit of EM use based on recognition of EM economic benefits (e.g., reduction of transaction costs), and legitimacy motivation refers to a firm's use of EMs as being influenced by suppliers, buyers, or competitors. Efficiency motivation is more likely to drive a firm's continued use of EMs, but firms driven primarily by legitimacy motivation are more likely to remain in a passive state of EM use. However, this stream of research has primarily focused on the motivation of organizational buyers (Son & Benbasat, 2007), or the motivation of using B2B EMs in general (Grewal et al., 2001). What motivates sellers to adopt the use of B2B EMs is still not clear.

The literature on SME eCommerce adoption brings a complementary perspective to seller motivation by linking a firm's adoption motivation with its strategy. It is suggested that SMEs with a strategic orientation to expand their product market can gain a competitive advantage on the Internet (Hussin et al., 2002; Raymond et al., 2005). For example, Nancy, Simha, and Parag (2006) analyzed the firm motivation for eCommerce adoption and found that the business strategy of the firm, including new product development strategy and market scope (intention to expand its market), had the greatest effect on its motivation for eCommerce adoption. Similarly, Raymond, Bergeron, and Blili (2005) found that the aggressiveness of SME strategic orientation, including the development of new markets/products and the introduction of new technology, affects an SME's assimilation of Internet technology positively.

However, conceptualizing seller motivation by strategic orientation to expand product markets is still not enough for a rich understanding of online vendor motivation. In China, the use of B2B EMs often accompanies entrepreneurship because B2B EMs are increasingly becoming a platform for entrepreneurship, either for the creation of a new business or for salvaging a troubled business. Even for existing SMEs, if no new companies are involved, the adoption of eCommerce can be considered a risky, entrepreneurial action. The perspective of entrepreneurship motivation is therefore helpful in explaining the growth and success of Chinese B2B online vendors.

**Entrepreneurial Motivation.** Since 2001, the *Global Entrepreneurship Monitor* (GEM), a research initiative conducted by a consortium of more than 100 scholars from 39 nations (Acs, 2007), has discussed two rather different types of entrepreneurship, namely, necessity and opportunity entrepreneurship (Reynolds et al., 2002, 2005). Necessity entrepreneurship is need-based, and arises when a firm is forced to change to meet the market's needs. Necessity entrepreneurs are somehow "pushed" into their position,

left with no other choice but to struggle to survive and make a living. Opportunity entrepreneurs are those who start a business in order to pursue a business opportunity and higher profits. The idea behind necessity and opportunity entrepreneurship is not entirely new. Storey (1994) was one of the first to classify the motivating factors of entrepreneurship as “push” and “pull” factors. Such a classification can also be found in other studies (Foti & Vivarelli, 1994; Uhlaner & Thurik, 2007).

Recent research has analyzed the antecedents and impact of necessity and opportunity entrepreneurship (Wagner, 2005). Opportunity entrepreneurs have been found more likely to be male, mature, risk-takers who are highly educated, and experienced in the focal industry (Lee et al., 2005; Wong et al., 2005). The two kinds of entrepreneurship also depend on national environments. Less developed countries have more necessity entrepreneurs than opportunity entrepreneurs. On the other hand, opportunity entrepreneurs have been found to have higher earnings and a greater impact on a nation’s economic development (creating more job opportunities) (Acs, 2007).

## Resource-Based View

The Resource-Based View (RBV) argues that the performance of firms is explained by the heterogeneity of resources that firms own (Barney, 1991; Mahoney & Pandain, 1992). Not all resources, but those that are rare, valuable, inimitable and non-substitutable confer competitive advantage to a firm. However, resources are static and the process through which particular resources provide competitive advantage is not clear (Priem & Butler, 2001). RBV researchers have suggested that the combination of a set of resources and complementary organizational components can form organizational capabilities which empower a firm to gain competitive advantages (Russo & Fouts, 1997). These organizational components, including organizational structure,

control systems, compensation policies, and culture (Barney, 1986), are conceptualized as “implementation skills” (Barney & Mackey, 2005) that ensure resources are properly leveraged or managed. However, a more dynamic view suggests that business processes, routines and activities through which resources are assembled and exploited (Eisenhardt & Martin, 2000; Ray et al., 2004; Teece et al., 1997) are integrative parts of organizational capabilities.

Organizational capabilities cover many aspects of organizational functions, including marketing capability (Morgan et al., 2009; Morgan & Jenny, 2008; Siu et al., 2004), product development (Pavlou & Sawy, 2006), production capability (Zahra & Nielsen, 2002), human resource capability (Chang & Chen, 2002), quality capability, cost reduction capability (Chandler & Hanks, 1994; Wang & Ang, 2004), entrepreneurial learning (Deakins & Freel, 1998), management and economic financial planning, and IS capability (Wade & Hulland, 2004). The issue of organizational capability is also of particular interest in the SME research field due to SMEs’ lack of resources (Hussin et al., 2002; Pflughoeft et al., 2003). Garengo and Bernardi (2007) provide a comprehensive explanation of important SME organizational capabilities. In general, researchers agree that a firm with superior organizational capabilities can achieve sustained competitive advantage (Newbert, 2007).

The contemporary perspective of RBV incorporates the role of dynamic capabilities in the form of organizational learning in an effort to address the criticism of the static nature of RBV. From a dynamic view, organizational capabilities can be renewed so as to achieve congruence with the changing business environment (Teece et al., 1997). Knowledge, learning and social relationships are enablers of organizational capability renewal (Bhatt & Grover, 2005; Kogut & Zander, 1992; Pavlou & Sawy, 2006; Teece et al., 1997). Dynamic capability is defined as the ability of firms “to integrate, build and reconfigure internal and external competences to address rapidly changing environments” (Teece et al., 1997,

p. 516). This is conceptualized as a type of higher order capability that contributes to the formation of a firm's idiosyncratic functional capabilities (Pavlou & Sawy 2006; Newey & Zahra 2009). Dynamic capability is especially important for SMEs which face greater uncertainty than bigger firms due to their lower capacity to collect and process market information (Caldeira & Ward, 2003; DØving & Gooderham, 2008; Wiklund & Shepherd, 2003). The current development of the dynamic capability literature is primarily limited to making sense of the concept; its antecedents have not been fully explored. Ambrosini and Brown (2009) suggested that, among many other factors, manager motivation, experience, and skills are important antecedents of dynamic capability.

RBV has been used by IS researchers to analyze the business value of IT. A general thesis of RBV based IT business value research is that IT resources such as IS infrastructure, IS human resources, and IS relationships can create value at different organizational levels, and complementary organizational resources can moderate the relationship between IT resources and IT business value (Bhatt & Grover, 2005; Brynjolfsson & Hitt, 1998; Brynjolfsson et al., 2002; Mata et al., 1995; Wade & Hulland, 2004; Zhang et al., 2008). These complementary factors could include non-IT people and management, business processes, knowledge assets, relationships, culture, structure, and policies, which could generate greater firm performance through the firm's IT system (Melville et al., 2004; Wade & Hulland, 2004). Differential value can be created by defining IT resources specific to a certain context and by extending knowledge of complementary and moderating factors in the value creation process. For example, Kettinger et al. (1994) described a number of such complementary resources, such as size, organizational structure, organizational culture, etc. that could make it difficult for competitors to copy the overall effect of the technology. Zhu (2004a) found that IT

infrastructure complements eCommerce capability in information provision, transaction, customization and integration, to generate greater firm value. Zhuang (2006) found that business resources such as relationships with suppliers and customers, and complementary human resources such as open communication among employees and an open organization, complement eCommerce resources in producing better eCommerce performance.

Building on the complementarity view of business IT value, Kohli and Grover (2008) further promote the idea of IT embeddedness, in which IT is tightly intertwined and becomes an integral part of organizational processes. Rather than trying to identify IT and complementary organizational sources, the IT embeddedness view contends that it is more useful to examine digital organizational capabilities in which IT and business processes, activities, and routines interact to create synergies.

Although the issue of organizational and IT capability has been relatively fully explored, there is a lack of systematic analysis of the organizational capabilities of online vendors. Some related research has been done. Eikebrokk and Olsen (2007) suggest that competency in e-business strategy, e-business strategic planning, IT-business process integration, IT management, systems and infrastructure, sourcing (the ability to secure access to relevant competencies either inside or outside the company), and alignment (the ability to combine and use available competencies) contributes to the performance of e-business in SMEs. Simmons and Durkin (2007) point out that Internet efficacy and the lack of marketing ability contributed negatively to Internet adoption by agri-food companies. However, the capabilities that an online vendor should develop in its use of B2B EMs are still not well defined, and more research in this regard is needed.

## **Guanxi Theory**

Although the Guanxi a firm possesses can be a subcategory of organizational strategic assets and capabilities, its importance suggests a

separate research field. Guanxi generally refers to a web of close and pervasive relationship connections that a firm/person can use to secure favors (Yang, 1994). It is a special type of relationship that bonds exchange parties through reciprocal obligations to obtain resources through continual cooperation and exchange of favors (Davies et al., 1995). Although personal relationships are inherent in many other cultures, the absence of formal institutional support (e.g., a solid regulatory system and a relatively weak and unreliable credit environment) makes Guanxi an important alternative governance mechanism for inter-organizational exchanges in China (Martinsons, 2008; Park & Luo, 2001; Xin & Pearce, 1996). Chinese businessmen are accustomed to establishing Guanxi with partners through meetings, chatting, or having dinner together before reaching a deal.

The social capital accrued from Guanxi offers a firm multi-faceted benefits (Adler & Kwon, 2002; Tsai & Ghoshal, 1998), including the provision of important sources of information on market trends, business opportunities and threats, access to labor and physical resources, relations with local governments (Davies et al., 1995), preferential treatment in business dealings, and protection from external threats (Lee et al., 2001). In the case of entrepreneurs, the lack of formal channels to collect market information and a lack of financial resources to build necessary production and marketing capacity make Guanxi especially important. The success of entrepreneurs sometimes depends on their ability to establish a *Guanxi Web*, and mobilize relationships in their own favor. However, there is a dark side to Guanxi (Gu et al., 2008): those who do not possess Guanxi are at a special disadvantage and excluded from business dealings. Smaller firms tend as a group to be more vulnerable to this dark side than bigger firms due to the lack of resources to build Guanxi in the early stages of their lifecycles (Baron & Markman, 2003; Waltera et al., 2006).

## RESEARCH METHODS

A content analysis methodology was adopted to study the motivation and success factors for SME online vendors through case studies. A recognized content analysis strategy (Krippendorff, 1980) was adopted to code and analyze the evidence. Cases were selected as sources of evidence, since case study is suitable for a phenomenon of interest that does not enjoy an established theoretical base (Benbasat et al., 1987; Yin, 1984). Since the phenomenon of SME online vendors is new, and their performance is less well studied, case research appears to be suitable for this work. The objective of this research is to build a theoretical model that systematically explains the performance of online vendors.

### Sampling and Data Collection

We selected successful cases in an effort to build the theoretical model. Thus we adopted a theoretical sampling strategy (Eisenhardt & Graebner, 2007) based on the logic that selecting multiple successful cases allows replication among cases with the objective of building a theory. A case is judged to have achieved initial success if the firm can achieve company growth and eCommerce makes a great contribution to that growth. Operationally, we consider a company successful in eCommerce if (1) it qualitatively acknowledges the significant contribution of eCommerce to company growth; or (2) the percentage of their total revenue from eCommerce is higher than 40% (see Table 2 for company performance information).

We mainly relied on published documents for sources of evidence. The cases were derived from two sources. However, multiple sources of data such as first hand interview data were collected to provide triangulation (Table 2).

First, *Ebrun*, a major Chinese portal website for e-business information ([www.ebrun.com](http://www.ebrun.com)) with which one of the authors is affiliated, has interviewed many B2B Internet firms, and reported many of their interviews in publicly

Table 2. Sources of data

Source of data	Explanations	Internet Performance
120 cases	Single source from <i>ebrun.com</i> , 2-3 pages each case	73% of average revenue is from B2B EMs.
35 top ten vendors	Multiple sources from major online media, books and vendors' own blogs. Some cases more than 20 pages long. Authors interviewed 6 of these vendors, and triangulated data with interview notes.	83% of average revenue is from B2B EMs. High growth rate (more than 100%) after adopting B2B EMs. Yearly sales revenues from RMB 10 million to 300 million, averaging RMB 66.15 million, and median RMB 32 million.

available documents. This website specializes in collecting and providing eCommerce information to the B2B industry and business to consumer (B2C) SMEs. It presents an online news column called "legendary businessmen" and their correspondents have been interviewing successful online small business entrepreneurs since 2004. They had performed 344 interviews when the authors accessed their database in November 2008. The interviews (cases) were screened and some discarded, either because (1) the information in the report was not comprehensive enough, or (2) the reports were not about B2B companies. 120 cases were retained for analysis.

Second, *Alibaba* launched an annual contest for successful online vendors, beginning in 2005. Each year ten successful online vendors were selected for published interviews. From this source we collected stories of 35 successful B2B online vendors from 2004 to 2009. We were also able to collect multiple sources of evidence about these companies, including major media reports, published books (Liang & Song, 2008; Shanghai & Si, 2008), videos, and blogs. In order to validate the quality of the data, the authors also conducted 1-2 hour interviews with six of these top ten vendors, five of which were conducted by telephone, and one face to face. Interviews were recorded and transcribed later. A comparison between interview data and second hand case stories showed that (1) the data quality of second hand materials is generally acceptable since these vendors were

honest and consistent in revealing company information; (2) when we aggregated all the cases, the codes covering all the cases did not cover topics beyond the interviews. Therefore, the coding based on each reported story may be incomplete, but it provided a good picture of what contributes to the success of SME online vendors (please see Table 3 for basic company information).

### Coding Procedure

Code development was a key step toward theory building. According to Miles and Huberman (1994, p. 155), there are two approaches to analyze qualitative data: the variable oriented approach and the process oriented approach. In the variable oriented approach, the researchers' main focus is to identify key variables and their relationships from the data, while in the process oriented approach, researchers focus more on event evolution over time. Our approach focuses on coding factors that explain the success of SME online vendors, and thus belongs to the first category.

Two of the authors read the materials individually, and tried to identify the distinct issues, practices and success factors that subjects mentioned. Special attention was paid to repeated patterns across cases, and these repeated patterns resulted in codes. The initial set of codes was discussed and refined among three of the authors. During this process, codes were developed entirely grounded in the data and



Table 3. Basic Information on SME Online vendors

		Number of companies
Prior industry experience	Yes	137
	No	10
	Unidentified*	8
	Total	155
Prior computer and eCommerce experience	Yes	101
	No	63
	Unidentified*	16
	Total	155
Industry	Trader	47
	Manufacturer	108
	Total	155

\* These are cases in which the status of the focal company could not be identified from the report.

no theory and theoretical constructs from prior theories were used. Theories were used only at a later stage in the interpretation of the codes.

*Nvivo*, a qualitative analysis software package, was used to aid the analysis of case materials (Gibbs, 2002). Once the set of codes was decided, the authors decided on an initial protocol for case coding, including the definition of the codes, and rules for deciding the right categories in case of conflict. Coding was an interactive process. Trained student assistants coded the first 15 cases independently. A case by case analysis among student assistants and the authors was performed to check whether any disagreements were due to misunderstanding of the codes, or deficiencies in protocols. The protocols were then further revised and misunderstandings clarified. The assistants then coded 20 more cases independently. The results were compared, and any problems of coding protocols were corrected. Then the remainders of the cases were coded. Through this interactive process, the estimated inter-coder agreement was greatly improved. Table 4 shows the results, including codes, definition of codes, explanations, and exception handling rules. The number of cases classified in each code and the kappa coeffi-

cients, a measure of inter-coder agreement, is provided in the Appendix.

## DISCUSSION OF THE CODING RESULTS AND RELATIONSHIPS BETWEEN CODES

Twelve major codes were identified, and integrated into the Motivation-Capability framework which is used to interpret the data. This also helps to maintain consistency with prior literature that explains B2B EM adoption and use, from the motivation and ability perspectives (Grewal et al., 2001; Son & Benbasat, 2007). There are four motivating factors: transaction cost saving, expanding sales - reactive, expanding sales - proactive, and building brand online, and eight Internet-leveraged organizational capabilities: online marketing capability, eCommerce management capability, eCommerce attitude, low price and cost reduction capability, product and service quality, product innovation capability, learning capability, and social networking.

Table 4. Coding dictionary and results

Concept	Definition	Explanation and substance	Exception handling rules
<b>Motivation</b>			
Transaction cost saving	The purpose of eCommerce is to save transaction costs involved in the search and negotiation stages of transactions.	<ul style="list-style-type: none"> <li>● Saving communication costs, such as mailing cost.</li> <li>● Saving transportation cost.</li> <li>● Cost saving in comparison with traditional channels.</li> </ul>	N/A
Expanding sales reactively	The initial purpose of eCommerce is to solve the sales problems of the company.	<ul style="list-style-type: none"> <li>● Solve the survival problems for troubled businesses.</li> </ul>	N/A
Expanding sales proactively	The purpose of eCommerce is to sell products in efforts to expand company market share.	<ul style="list-style-type: none"> <li>● Leveraging online opportunities to sell products after careful evaluation. <ul style="list-style-type: none"> <li>■ High profit margin.</li> <li>■ New products that target online businesses.</li> </ul> </li> <li>● Companies normally adopt a growth strategy.</li> </ul>	N/A
Promoting new brand	The purpose of eCommerce is to promote the company's own product brand.	<ul style="list-style-type: none"> <li>● Develop a network of brokers online.</li> <li>● Improve profit margin through branding strategy.</li> </ul>	N/A
<b>Internet-leveraged Organizational Capability</b>			
<b>(1) Internet-leveraged Functional Capability</b>			
Online marketing capability	An organization's ability to promote its products and company online, and to acquire and retain customers.	<ul style="list-style-type: none"> <li>● Practices related to online marketing and advertisement: <ul style="list-style-type: none"> <li>■ Blog.</li> <li>■ Forum.</li> <li>■ Selection of B2B platform.</li> <li>■ Search engine marketing.</li> </ul> </li> <li>● Efforts related to online product display and online communication.</li> <li>● Other marketing skills.</li> </ul>	Code by online marketing tools.
ECommerce management capability	An organization's ability to manage eCommerce activities in the company.	<p>Identified eCommerce management practices:</p> <ul style="list-style-type: none"> <li>● Establish eCommerce departments.</li> <li>● Task divisions.</li> <li>● Incentive mechanisms.</li> <li>● Customer relationship management.</li> <li>● Use of information systems.</li> <li>● eCommerce culture</li> </ul>	N/A
ECommerce attitude	An organization's attitude towards the use of eCommerce.	<ul style="list-style-type: none"> <li>● Enthusiasm.</li> <li>● Persistence.</li> <li>● Diligence.</li> <li>● Confidence</li> </ul>	N/A

*continued on following page*

Table 4. continued

Product and service quality	An organization's ability to provide high quality products and service online.	<ul style="list-style-type: none"> <li>● Product quality.</li> <li>● Service quality.</li> </ul>	Achievement of product quality certification is coded in this category
Product innovation	An organization's ability to create new products and satisfy the changing needs of its online customers.	<ul style="list-style-type: none"> <li>● Product innovation to counter intensified competition and price wars.</li> <li>● Product innovation to extend the applicability of products.</li> </ul>	Developing products tailored to the needs of different types of customers is coded in this category.
Low price and cost reduction capability	An organization's ability to gain by price advantage. The price may be evaluated based on the quality of the product.	<ul style="list-style-type: none"> <li>● The importance of offering low prices online.</li> <li>● Company practices to lower product costs.</li> </ul>	N/A
<b>(2) Internet-leveraged Dynamic Capability</b>			
Learning	An organization's ability to acquire, assimilate and exploit eCommerce related knowledge.	<ul style="list-style-type: none"> <li>● Learning through participating in different online platforms.</li> <li>● Training.</li> <li>● The substance of learning includes not only eCommerce knowledge, but also product and market knowledge</li> </ul>	In case of conflict with marketing and social networking codes, code into marketing capability.
Social network	An online network of people linked by one or more specific types of interdependency, such as values, visions, friendship, and transactions.	<ul style="list-style-type: none"> <li>● Instant messaging.</li> <li>● Online vendor alliance.</li> <li>● Blog.</li> <li>● Forum.</li> <li>● Others.</li> </ul>	<ul style="list-style-type: none"> <li>● Code with online social network tools.</li> <li>● In case of conflict with marketing tools, code into marketing capability<sup>a</sup>.</li> </ul>

a) The purpose of such specification is to achieve higher reliability and consistency in the coding. In the document, the authors refer to these categories to search for learning content. Thus the number of cases in this and code "learning" may be underestimated. However, this did not dampen our theory building since we consistently referred to the marketing capability code when interpreting these two codes.

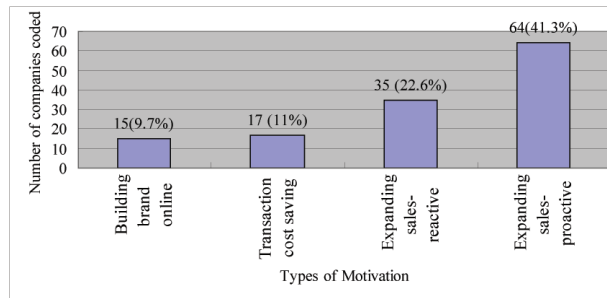
## Motivation

Motivation describes a firm's incentives for using the Internet. Four types of motivation for using B2B EMs were found, and they can be categorized into the two entrepreneurship motivations introduced in the literature review: necessity motivation and opportunity motivation. Necessity motivation is a more reactive reason for eCommerce use, such as using B2B EMs in order to save cost, or to save the company from crisis. Opportunity motivation is more proactive in the pursuit of business opportunities leveraged by the Internet, such as extending market share to satisfy company

growth requirements, capturing business opportunities leveraged by the Internet, and building company brand online to achieve more sustainable growth. The two categories of B2B use motivation are not mutually exclusive. A company with opportunity-driven motivation can also be driven by necessity motivation.

Figure 1 shows the number of companies classified in each code, indicating that many successful firms have adopted EMs proactively. This is not to say that firms pushed to adopt EMs will not perform well later. But it appears that firms with opportunity-driven motivation are more likely to succeed due to their higher proportion among all the cases analyzed. This

Figure 1. Summary statistics for the motivation codes



is consistent with findings in the literature that opportunity driven entrepreneurship is more likely to succeed (Acs, 2007).

## Necessity Motivation

**Expanding sales - reactive.** One motivation for SMEs to use B2B EMs is to sell products and expand market share. However, the reasons they provided for expanding their markets vary. Some reasons were very reactive in the initial selection of B2B EMs, mainly to solve a crisis that a company encountered when selling in the traditional way. B2B EMs were then adopted as an alternative channel of sales. The following are reasons we encountered in the data analysis that could get a business into trouble.

First, lack of personal relationships or Guanxi with customers and suppliers may push them to adopt the use of EMs, especially after launching new products and/or transforming into a new industry. For example, a case subject commented: *“the security and defense industry is very special... The sellers and buyers normally have long-term collaborative relationships, so it is hard for a new company to be recognized and accepted by the buyers who have already had long-term collaboration with existing sellers”*. In a few cases we found that inexperienced young business owners who took over businesses from their families were pushed to select B2B EMs since they did not have previous

experience and personal relationships to support their sales. The different lifestyle (using computers and the Internet a lot in daily life) also discourages them from following their parents' way of selling door to door.

Second, niche products are especially hard to sell in traditional ways, which forces vendors to try the Internet. One online vendor commented: *“although international trade shows can attract many buyers, they are not feasible for our products- ... too small and hard to attract buyers' attention. So...we selected eCommerce.”* In this case, B2B eCommerce solves the problem of being unable to use traditional channels.

Third, a poor credit environment can force companies to use B2B EMs. *“In 2001, we encountered crisis in the traditional business. The problem of chain debts in domestic trade plagued our business. So I decided to turn to international trade.... attending China Import and Export Fair in Guanzhou was the only way to access international buyers. However, a showroom costs 60,000-120,000 RMB (around \$10,000–\$20,000)”*. So they adopted B2B EMs.

Fourth, economic fluctuations such as industry downturns, falling product prices and severe market surpluses, can force companies to use B2B EMs. *“The price of our product, Silymarin (a type of plant), decreased from RMB 8000 to 4150 per ton at that time, our profit margin was greatly squeezed. We had a great pressure to increase the sales volume.... Now I wish to try it (eCommerce)”*.

Finally social environmental changes can sometimes cause business difficulties. For example, the Severe Acute Respiratory Syndrome (SARS) epidemic pushed some companies to use eCommerce. *"In 2003 SARS affected many traditional businesses...We cannot go out to visit potential clients and attend trade shows... I registered the Golden Suppliers program of Alibaba and started our new journey"*. City environmental changes, such as the increase in high-rise buildings, also forced some businesses to select eCommerce since it was more difficult to access buildings equipped with strict access management.

**Transaction Cost Saving.** Leveraging the cost advantage of online selling is a less frequently encountered motivation for EM adoption. Few online companies use B2B EMs to fulfill transactions, so costs saved are mainly in marketing. B2B EMs are more cost effective than selling the traditional way (attending tradeshows, mailing promotional pamphlets and samples, visiting clients). *"The cost of eCommerce per year is only that of one trade show"*. Time and health costs are also reduced. *"2003 was the busiest year for me. In order to sell the products, I traveled a lot, both in China and worldwide, including visiting clients, attending tradeshows, inspecting suppliers. At the end of the year, I accumulated 114 boarding passes. The doctor told me that I should stop flying since my ear drum was damaged.... The tradeshows also turned out to be less effective than before. I had to figure a way out, so I started to use B2B platforms"*.

We found that SMEs in this category were reactively motivated to adopt EMs. This is because for SME online vendors, an inherent motivation is to grow their business as long as cost increases did not surpass sales increase. Reducing marketing costs alone cannot stimulate them to adopt EMs unless they are forced to do so, since their major focus is the effectiveness of marketing.

## Entrepreneurship Motivation

**Expanding Sales: Proactive.** The proactive use of the Internet to extend market share occurs when EMs are recognized as a good opportunity to expand market share and achieve company growth. The pursuit of online channels is a strategic decision of a company that is operating well.

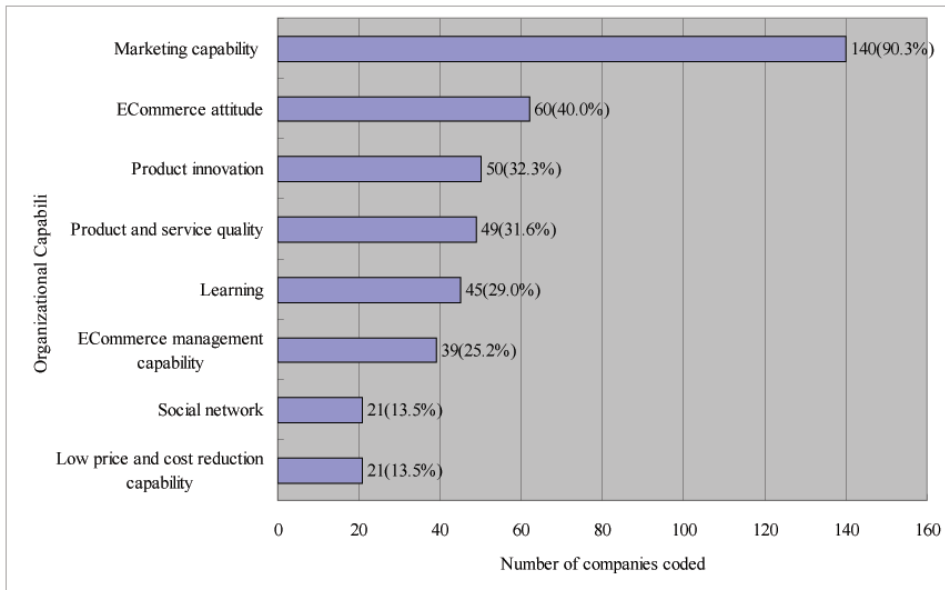
Such opportunities can be the discovery of new online sales channels. For example, some companies stated that online sales channels became feasible because customers were more used to purchasing products online, while competitors were still not aware of this. This creates a great opportunity to sell products online.

The discovery of entirely new product markets can also create business opportunities. For example, one individual found that paper cartons for packaging products for delivery were urgently needed by *Taobao* sellers (*Taobao* is the largest B2C marketplace in China, similar to *eBay*). She then started a business of designing and producing cartons to fulfill the needs of *Taobao* sellers, and selling them through B2B EMs. Her business was given one of the top ten vendor awards by *Alibaba*.

High profit margins and arbitrage opportunities also encourage some people to launch a new business. In one case, a woman found that a type of clothes was sold at RMB8 offline in a wholesale market, but RMB25 online. She and her husband immediately launched Internet sales for that product.

**Building Brand Online.** Fifteen companies in our study chose not only to sell products, but to build their own brands online. These firms are more ambitious, risk taking, and are primarily concerned about long-term return. The process of building brand online involves establishing and managing sales channels systematically, for example, through Internet sales networks. One company built a national wide sales network of close to 600 brokers and dealers online very quickly, and managed the network online

Figure 2. Summary statistics for Internet leveraged organizational capability codes



through an online instant messaging tool and a discussion forum. In another case, a toy manufacturer found that it was paying 10-15% of their profits to an international trade intermediary. The company then built a brand called “The Wooden Toy Family”, and used both B2B and B2C channels to sell its branded products. Now they sell online directly to businesses and consumers and have developed their own online broker network for local markets.

To summarize, among all the successful online vendors we have studied, some are pushed to adopt EMs for reasons such as saving the company from crisis or for cost saving, and some are motivated to adopt EMs to leverage better business opportunities online. Online vendors with strong opportunity driven or necessity motivation can succeed online. But those with opportunity driven motivation are better prepared for the use of EMs. They also have clearer business goals, targeting higher profit margins or greater growth potential (Lee et al., 2005; Wong et al., 2005).

## Internet Leveraged Organizational Capabilities

Internet leveraged organizational capabilities are the combination of organizational capabilities and eCommerce technologies in either a complementary or an embedded manner that enables SME online vendors to achieve competitive advantage online. Our analysis found eight codes related to the organizational capabilities that SMEs considered important in the exploration and exploitation of the Internet to sell products (see Table 4 and Figure 2 for the frequencies of these codes): online marketing capability, eCommerce management capability, eCommerce attitude, low price and cost reduction capability, product and service quality, product innovation capability, learning capability, and social networking capability. Among them, online marketing capability was the most frequently mentioned, followed by eCommerce attitude, production innovation and product and service quality, in that order. Although online social networking was ranked low, its importance was underestimated since some online social tools such as blogs and fo-

rums were incorporated into online marketing capability for coding consistency purposes. As an example, publishing articles in a forum can increase a vendor's exposure as well as making friends online (Weiss et al., 2008). If we had also included online social tools in the social network code, this code would be ranked in second place. Finally, contrary to many practitioners' intuition, low price and cost reduction capability was ranked lowest, since few successful online vendors pursued this strategy.

Although the organizational capabilities identified in our case studies are similar to those studied before for traditional businesses (Garengo & Bernardi, 2007; Grant, 1991; Newbert, 2007), they are different in that they are Internet-leveraged organization capabilities. Adopting B2B EMs means that online vendors adopt eCommerce technologies such as EMs, search engines, blogs, and forums, which are simple technologies that may not generate competitive advantage. The interaction of eCommerce assets and organizational practices, routines and activities is hard for other firms to copy and enables firms to achieve competitive advantage. Such interactions can be complementary or embedded. From the complementary view, some organizational resources reinforce the effectiveness of eCommerce assets (Melville et al., 2004; Zhu, 2004a). But eCommerce technology and mindset may be embedded and hard to separate from organizational practices, routines and activities (Barney, 1991; Kohli & Grover, 2008).

Internet-leveraged organizational capabilities can be further classified into dynamic and functional capabilities (Table 4). The logic for including social networking and learning capability as elements of dynamic capability can be found in Teece et al. (1997) which argues that learning enables restructuring and adaptation of organizational capabilities to fit with new technologies, and social networking is the mechanism through which learning occurs. Functional capabilities can cover most organizational functions, such as marketing, production, product development, EM management systems

etc., as long as they are relevant to EM use. This classification of organizational capability follows the suggestion of (Grant, 1991; Pavlou & Sawy, 2006), in that a firm's capabilities can be identified and appraised using a standard functional classification of firm activities. It has also been called the "organizing approach" of organizational capabilities (Newbert, 2007).

The following provides an explanation of the functional and dynamic capability codes, and how eCommerce is tightly intertwined with relevant aspects of organizational capabilities to form Internet leveraged capabilities.

## Internet-Leveraged Functional Capabilities

### 1. Online Marketing Capability

Online marketing capability is a firm's ability and skills to leverage Internet technologies to market products online. This is closely aligned with SME motivation for growth. The following subcategories of online marketing capabilities were observed.

**Online advertising skill.** Advertising products online and increasing product exposure is the first step in selling online. Marketing tools, such as search engines, blogs, forums, and B2B portals are relatively new, so the best way to use them is learned through trial and error, or from peers online. Our data suggests that the following techniques mentioned by successful online vendors are effective.

- Blogs and forums are cheap but effective, and are preferred by small start-up companies with financial constraints. Articles and postings are called "Soft-text" by Chinese online vendors. Many companies assigned specific persons to write such articles, and have thereby accumulated rich experience. This helps to push company information towards top place in search engine result lists, without paying advertising fees.

- Companies in good financial health tend to be more aggressive. They normally purchase keywords from B2B portals and major search engines to increase their exposure and attract attention from buyers.
- Selection of a suitable B2B portal is difficult since different EMs have different customer and product focuses, functionalities, and strategies to describe products. SMEs therefore need experience in finding the best EMs. For example, two subjects commented that “*“We only use B2B platforms that have a “plant extract” industry sub-category; “I select GreyCloth.com since it has some specific categories for grey fabrics. It also sends us the most updated information about fabric every day to my cell phone”.*”
- Successful SMEs use an integrated combination of EMs, websites, forums, and blogs to market their products. Most use more than one B2B portal, (as high as 30 in one case, chosen from more than 200 possibilities).

**Online product presentation skills.** A rich description of the company and its products, using both pictures and text descriptions, is what potential customers see up front, so this must be done effectively to attract customers. However, not many SMEs understand the importance of product presentation. For example, “*when some bosses introduce the products to their customers, they can talk a lot of stuff to secure or pursue customers. But online, they provide little information or nothing?*”. Online product presentation requires an understanding of exactly what information customers want, and how they find information about sellers. Highly innovative techniques are used by some SMEs. B2B buyers care not only about product fit and quality, but also production capacity to ensure that products can be delivered as contracted. Some online vendors upload factory videos. In

one case, a company installed an advanced factory monitoring system, so buyers could inspect the production process remotely and in real time.

**Online Communication Skills.** After customers initiate a conversation (through online chatting, online quote, or email), intensive interactions and negotiations start, and they are the key to winning businesses. Following are examples of heuristics for communicating online we encountered in the case analysis: (a) Focusing on professional interactions. Replies to clients must exhibit the seller’s knowledge of products and the industry; (b) Being honest. Tell the truth if the products can not satisfy the quality and capacity requirements of clients; (c) Responding in a timely manner to customer e-mails. This enhances the client’s perceptions of his or her importance to the firm; (d) Respecting customer culture during interactions. Other more detailed heuristics are idiosyncratic and known only to specific firms.

The explanation of Internet leveraged marketing capability illustrates that successful online vendors (1) fully integrated various EM marketing tools into daily marketing activities and routines; and (2) accumulated idiosyncratic business heuristics about how to market and interact with customers. The closely related work processes (sales and customer relationship management processes), to be introduced shortly, also need to change in support of online marketing activities. The foregoing EM marketing technologies and embedded marketing activities, the heuristics and skills accrued during adoption, and compatible work processes, are invaluable in helping online vendors to achieve competitive advantage.

## 2. E-Commerce Management Capability

ECommerce management capability is the firm’s ability and skills to manage eCommerce related processes and activities. Good com-



patible management practices are important complementary resources that can reinforce the effectiveness of front end online market activities, enabling firms to benefit most from the use of EMs (Bhatt & Grover, 2005; Brynjolfsson & Hitt, 1998; Brynjolfsson et al., 2002; Mata et al., 1995; Wade & Hulland, 2004; Zhang et al., 2008). Establishing such management practices is a great challenge for SMEs because: (1) SME leaders tend to have less management capacity (Barringer & Jones, 2004) due to lack of knowledge and education; (2) due to the emerging nature of Internet marketing, good practices in this discipline are not even well developed in larger companies, and not well understood by academics. So the establishment of such practices relies mainly on the innovative management ability of SMEs and entrepreneurs. Several good management practices were identified in the data analysis and explained in the following.

**Sales and customer relationship management process.** Online vendors tend to design their own business processes for transaction and inquiry handling. These processes are important in converting and retaining potential customer leads.

Online processes differ from those in traditional business. For example, one firm described its online selling process as an “iron triangle”, formed by three people in the eCommerce department. When there is an important customer inquiry, team members first think about the case individually, and then gather to discuss the case. Tasks such as replying and monitoring are then assigned among the three, with each responsible for one or more tasks. This company’s management commented that, in order to take advantage of eCommerce opportunities, a firm needs to change its business process in order to fit into the eCommerce rhythm. In another company, 22 employees were assigned to one of three eCommerce units: an eCommerce analysis unit, an international trade unit and a domestic trade unit. For each inquiry, the eCommerce analysis department checks basic information

on buyers and products, and determines whether it is a fraudulent inquiry. Then the inquiry is sent to the international and/or domestic trade units for processing. This company strived to improve the efficiency of high volume inquiry handling through restructuring or innovating the organizational process.

One subject articulated her rationale of “*advancing transaction cost*” in the design of the online customer inquiry handling process: “...*this means taking a proactive approach in acquiring and retaining customers...you can get a large number of business opportunities and inquiries in a short period of time. Many companies failed to sell on the Internet because their early phase preparation is not good enough, so that the communication cost is shifted to the later phase of the interaction with buyers.... but the cost of later phase of communication is very high*”. This is in accordance with transaction cost theory (Williamson, 1975), suggesting that market ex-post transaction costs such as after-sales haggling are high. So this subject focuses on improving the quality of communication at an earlier stage, and embeds this philosophy into work procedures. This case illustrates that the establishment of eCommerce management practices relies mainly on a deep understanding of online business tricks, and the innovative management ability of SMEs and entrepreneurs.

**Incentive systems for eCommerce sales forces.** Incentive and monitoring systems can be put in place to motivate eCommerce employees and evaluate their performance. Performance metrics can be operational, such as the number of employee postings in forums and B2B portals per day, the number of emails they send to customers per day, and the number of customers acquired online over several months. “*The benefit of the Internet is that everything is recorded and can be retrieved. Machines do not lie. It is easy for us to find the information posted by specific employees*”. Some companies use sales levels to evaluate salespersons. The design of incentive and monitoring systems complements online

selling technologies to enhance employee effectiveness (Zhuang & Lederer, 2006), while at the same time embedding Internet technology, such as monitoring employee sales activities.

**IT support.** IT is an important complementary asset to a firm's eCommerce capability (Zhu, 2004a). Our findings agree but there is no standard IT system in use by all online vendors. Their information systems configurations depend on business needs. Some used the SaaS (Software as a Service) provided by B2B EMs, but a few successful vendors have customized their own in-house systems. *"On the Internet, we need to capture business opportunity quickly since market can be very dynamic online. Information systems can help us in this respect. For my industry... we need to provide quotes to customers almost every day. However, the systems that we deployed two years ago help us to provide instant, correct quote, so customers are satisfied with our service. ... Our information system was co-developed with a software company, and was adapted to our work procedure.... Once the prices change, all our salesperson can see the prices and make large number of replies to inquires within short period of time"*. Another subject commented, *"we divide our systems into four types: one is for internal communication within the company, such as email, IM, and video systems. The purpose is to facilitate factory management in remote locations. The second part is purchasing, sales and warehouse management. The third part is online marketing management, and the last part is for training within the company.... it is very effective"*.

These cases suggest that IT systems cover most business functions, including supply chain management (SCM) and customer relationship management (CRM) (Eikebrokk & Olsen, 2007), and systems that help to handle high price volatility in the online market. Different from non-eCommerce enabled IT systems, Internet

tools such as search, instant messaging, etc. are integrated into most systems provided by EMs, such as *Alibaba*.

**Establishment of eCommerce culture.** eCommerce is infused into many aspects of company activities in many successful online companies. Replying to customer inquiries daily, using the company website, and creating blogs are normal employee activities. In many companies, instant messaging is used not only to facilitate communication between company and customers, but also for internal communication among employees and management. Encouragement of an eCommerce culture can enhance the effectiveness of eCommerce technology by increasing employee awareness, enhancing the value they place on eCommerce, and building an employee eCommerce mindset (Zhuang & Lederer, 2006).

### 3. E-Commerce Attitudes

Attitudes toward eCommerce that were valued by the case subjects include enthusiasm, confidence, diligence and persistence. Persistence is especially emphasized. It is important because (1) it takes time for a company to learn how to effectively market its products online and restructure its work procedures; (2) B2B customers are more cautious due to the size of orders and possible bad chain consequences in later production. It also takes time for buyers to investigate and accept new suppliers. *"The buyer's purchasing process is very formal. They first asked for more information to know more about our company, and then sent request for quote and negotiated with us. Finally they sent people to visit our company. The entire process lasted 5 months. Then they started to order from us.... One has to be persistent during the process"*. One subject called the sudden explosion of online sales after many months with no inquiries the *"Nuclear Fusion Effect"*. A persistent attitude to eCommerce is necessary to deal with the time lag for eCommerce effort to be effective. This time lag phenomenon

has also been observed in explaining the IT productivity paradox, where IT adoption was found not to be related to immediate productivity growth (Brynjolfsson & Hitt, 1998). Firms with a positive attitude towards eCommerce are also more likely to become engaged with eCommerce (Chen & McQueen, 2007).

ECommerce attitude serves as an important organizational resource that enables the success of online vendors. Many online vendors attributed their success to their positive attitude toward eCommerce, and commented that, without enthusiasm, confidence, diligence and persistence, they could not have gotten where they were today.

#### 4. Product and Service Quality Capability

Product and service quality capability refers to a firm's ability and skills to offer high quality products and services online. Because successful online marketing needs to be supported by product and service quality to build credibility in the virtual business environment, product and service quality capability is an important complementary organizational resource for firms to achieve online marketing effectiveness. Some researchers consider this to be an integral aspect of marketing capability (Morgan & Jenny, 2008). To improve product quality, online vendors can either invest in new product R&D, or focus on manufacturing quality control. As one case subject commented, *"(the boss) decided to set the task of internal quality management as the top priority of the company. He established policies about the accountability of quality management throughout the entire process and among all employees; each step of the procedure must have clear quality control point and accountability. The quality control points are constantly monitored."* Some vendors obtain accreditation from recognized standards organizations, and communicate this information to buyers on their web sites.

In Internet leveraged product and service capability, eCommerce technology is also embedded in the product quality and service

capability of a firm. This includes selecting high quality suppliers and products online (for traders), learning how to improve product and service quality online, and providing good online customer service. Internet selling also changes the nature and scope of customer service, so that firms have to reengineer their service processes. For example, a company's customer service may change due to the larger geographic customer scope. Providing labor intensive customer service to local customers must give way to a greater reliance on machine based customer service without sacrificing service levels.

#### 5. Product Innovation Capability

Product innovation capability refers to a firm's ability to either create new products or improve previous products of its kind in an effort to better satisfy the changing needs of online customers. Product innovation offers several advantages to online companies: extending product applicability, differentiating products from those of others, avoiding online price wars, reducing production costs, increasing selling prices, and improving profit margins since customers are willing to pay more for products that fit their needs, so it is an complementary resource that enhances firm's online competitive advantage. As a case subject commented, *"when selling on the Internet, the products have to be unique and targeted.... customers can find a large number of companies that provide similar products through search engines. Without its unique characteristics, a company has to rely on price to attract customers. Only companies with special products and proprietary intellectual property rights can have sustained growth on this platform"*.

Internet-leveraged product innovation capability is different from traditional production innovation capability in the sense that eCommerce tools and mindset are embedded in the needs identification and intelligence gathering for detailed product design. First, for many companies, one possible innovation is the adaptation of products for online selling. For example,

products that are limited to the local environment can restrain companies from taking advantage of the Internet. Therefore, some companies develop new and more relevant products to increase their applicability in different locations. *“Our product is plants. Plants can only grow with proper soil and weather. In order to solve this problem, we invested in the cultivation of new plants, so that our plants can grow in cold weather in North China, or can grow in the cold and dry weather in North-West China”*. Second, ideas for new product development are received from online channels, including online search and customer inquiries. *“Once I got an order from a US customer who needed color eggs made from plaster. I never thought that plaster could be used to make arts and crafts, since I only make chalks.... From then on, I developed many new products, including the trap chalks that were used in 2008 Beijing Olympic Games. The product variety also increased from 10 to 300”*. Advanced new product development tools and practices are suggested in the prior literature to greatly improve the development process (Pavlou & Sawy, 2006), but our case studies indicate that SME online vendors can also benefit from free online search and communication tools.

## 6. Low Price and Cost Reduction Capability

Low price and cost reduction capability refers to the firms' ability to compete online based on lower prices. In B2B marketplaces, offering lower prices is a source of competitive advantage due to information transparency and intensified competition (Bakos, 1991; Zhu, 2004b). Due to the large quantities that are usually involved in B2B transactions, very small price reductions can be translated into substantial cost savings online. However, a lower price strategy must be accompanied by the capability to reduce costs. Our findings included several ways to support such a strategy:

- Reducing cost through careful cost management, production scheduling, or technology innovation.
- Being knowledgeable about the price dynamics in online markets, to find low cost supplies.
- Purchasing with cash from suppliers willing to provide better quality products at lower prices.

Low price and cost reduction capability complements a firm's Internet use and enhances its effectiveness. ECommerce technologies are not as closely intertwined in the pricing and production systems as they are in marketing capability, but they are reflected in the following aspects of a firm's business processes: (1) checking competitor prices online; (2) changing prices dynamically online; (3) purchasing supplies from low cost online suppliers; (4) improving case flow by selling online for cash; (5) learning about cost saving production technologies online.

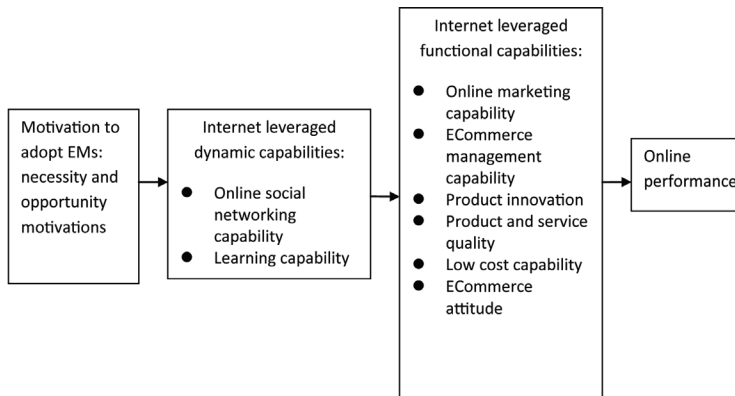
## Internet-Leveraged Dynamic Capabilities

### 1. Learning Capability

Learning capability is the firm's ability to learn eCommerce related knowledge. Grewal et al. (2001) conceptualized two types of EM learning, effort based and time based learning. Concordant with this result, our findings suggest that successful online vendors deliberately pursue learning by immersing themselves in eCommerce (through effort based learning).

Many SMEs lack basic knowledge of eCommerce and online marketing, so the transition to the online environment is an intensive and difficult learning process. ECommerce employees learn through sources such as books, education and training, from colleagues, and from online sources such as Internet forums, blogs, and online business alliances. The substance of learning covers many aspects of eCommerce, including basic computer knowledge, online marketing and communication knowledge, market and product information, and knowledge about international trade. Internet leveraged learning greatly shortens the time needed to train international trade employees. *“Previously*

Figure 3. Performance of SME online vendors: The motivation-capability framework



*it took five years to cultivate an international trade employee, but now it took 3 months for an international trade employee to catch up with the performance of his colleagues”.*

Some companies institutionalize organizational learning by establishing rules and business processes for learning. They write guidelines, documents, and training materials, and share these materials company-wide. One firm provided training for newly recruited undergraduate students on how to use the Internet to find customers, and organized meetings each week among salespersons to share their online experience: how to attract new customers, how to reply to emails, how to identify online fraudulent behavior, etc. *“This will not only increase their ability to acquire and interact with customers online, but also put pressure on those who do not want to learn new things, since they know that their colleagues find customers online”.*

Learning capability is especially important in dynamic, volatile online environments. It is an important complementary asset for an eCommerce online vendor (Caldeira & Ward, 2003; DØving & Gooderham, 2008; Wiklund & Shepherd, 2003). Uncertainties encountered by firms are multi-faceted, including changing customer demand, the emergence of new business opportunities, and even changes of EM search engine rankings or product listing rules.

For example, several subjects commented that they found that the time they updated their product lists daily affected rankings on the website. They suspected this was related to changes in the time that EM staff checked and approved listings. In response, they had to constantly check the time to adjust their product listing publication strategy.

## 2. Social Networks

Many researchers assume that online marketplaces are impersonal and rule based, so Guanxi or social networks are no longer important (Hsiao, 2003). Reliance on Guanxi has also been seen as a “powerful obstacle” to the transformation to rule-based systems in China (Hsiao, 2003; Martinsons, 2008). However, we observed that many successful online vendors actively engaged in social networking activities through either Internet social technologies or by interacting offline. Social networking capability is still a complementary asset for firms to achieve better online performance. The difference is more reflected in the form of social network. On the Internet, firms take advantage of the wide availability of Internet social technologies to build online social networks. An online social network is an organization-maintained online network of people that are linked through one or more specific types of interdependency, such as values, visions, friendships, and trade.

Some online business relationships are formal in nature. For example, business associations related to eCommerce, such as the *Huanan Business Association* and the *Shanghai Business Association*, are regional associations formed by online vendors. Members meet regularly, both online and offline, to discuss how to market and sell their products and to make friends in order to explore opportunities made available by EMs.

Other online business relationships are more private and informal. One example is the use of instant messaging and group chat tools to build more private networks. One online vendor used MSN (*Microsoft Network*) to connect 500 friends worldwide, and developed partnerships with many of them. Many subjects used blogs to communicate with friends and potential customers. One interesting quote is that “*marketplace is where people meet to do business, and forum and blogs are the coffee shop besides the marketplaces. People socialize with each other in these coffee shops.*” Ou et al. (2008) also found that instant messaging tools can help build Guanxi between virtual trading partners by enhancing interactivity and social presence.

## THEORIZING MOTIVATION CAPABILITY RELATIONSHIPS

In the M-C framework (Figure 3), Internet-leveraged organizational capabilities are further divided into dynamic and functional capabilities. Functional capabilities involve only one or two organizational functions, and are a firm's eCommerce related processes and practices. As addressed in the code analysis, eCommerce knowledge and skills are embedded in these aspects of organizational capabilities, and are hard for competitors to copy. Thus Internet-leveraged organizational capabilities lead directly to online success.

Dynamic capabilities are more general and are not directly related to firm online success. It is an enabling capability in the sense that only when the knowledge accumulated through

learning and social networking has been applied to the organizational practices which forms internet-leveraged function capabilities, can dynamic capabilities have an impact on online success. It is through learning and social networking that a firm learns how to build Internet-leveraged functional capabilities. For example, through online social networking and learning, firms master the skill of online marketing, and can get updated information about online marketing practices. Online social networks also enhance online marketing ability through resource mobilization. Some firms form marketing alliances online to share their marketing resources, such as co-marketing and collaborative order fulfillment. This also helps a firm to build and improve online marketing capability. The enabling role of dynamic capabilities in building certain organizational capabilities has also been shown elsewhere (Bhatt & Grover, 2005; Pavlou & Sawy, 2006; Newey & Zahra, 2009). We propose:

- P1: Firms with greater Internet leveraged organizational functional capabilities are more likely to succeed online.
- P2: Firms with higher Internet-leveraged dynamic capabilities will have an enhanced potential to build greater Internet leveraged organizational functional capabilities.

The motivations for adopting EMs were coded as factors that have relationships with online performance. This arose from the observation that most successful firms exhibit a strong desire to use the Internet, either to solve company crisis, or to expand their market share. Prior research on business value of IT suggests that IT will lead to high organizational performance when it is deployed in alignment with firm strategy (Hussin et al., 2002). Kohli and Grover (2008) further argued that the firm's strategy serves guidance in the adoption of IT and the deployment of complementary organizational resources. In many SMEs, firms do not necessarily have a formal documented strategy, but a strategic orientation (Raymond

et al., 2005). This strategic orientation is similar to the concept of motivation in the sense that both are goal directed arousal and offer guidance for firm behavior.

However, motivation itself does not necessarily result in higher online performance directly. We argue that firms with higher motivation are more committed, and more likely to engage in developing dynamic capabilities such as learning and social networking, which in turn have an impact on Internet leveraged organizational capabilities and firm online performance. Existing research also suggests that manager/entrepreneur motivation is an important antecedent of dynamic capabilities (Ambrosini & Bowman, 2009). So we have the proposition:

P3: The stronger a firm's motivation to adopt EMs either proactively or reactively, the more likely the firm will commit itself to build Internet-leveraged dynamic capabilities.

## DISCUSSION AND CONCLUSION

### Discussion

Through a content analysis of high performing SME Chinese online vendor cases, this paper builds an integrated Motivation-Capability framework to explain the success of SME online vendors in China. Twelve major codes were developed, entirely based on data from SME cases. These included four motivation factors: transaction cost saving, expanding sales- reactive, expanding sales - proactive and building brand online. Eight Internet-leveraged organizational capabilities were identified: online marketing capability, eCommerce management capability, attitude towards eCommerce, low price and cost reduction capability, product and service quality, product innovation capability, learning capability, and social networks. These codes were organized and interpreted, based on entrepreneurial motivation theory, the resource based view (RBV), and Guanxi theory. Their

relationships were developed into a Motivation-Capability theory.

Our findings contribute to a richer understanding of SME online vendor motivation to adopt B2B EMs. The existing literature on B2B EM motivation emphasizes efficiency and legitimate motivation. But legitimate motivation is not a success factor, as suggested by Grewal, Corner, and Mehta (2001) Son and Benbasat (2007) and our research. As for efficiency motivation, prior literature suggested that firms adopt EMs to reduce transaction costs (Son & Benbasat 2007) and to achieve efficiency, but our findings suggest that cost saving is only one of the reasons for EM adoption. We found that marketing effectiveness, increasing sales, and extending market share, are the major driving forces for online vendors to adopt EMs, whether proactively or reactively. This discrepancy with previous research has two implications. First, since our research focuses on online sellers, and prior research focuses on organizational buyers, a potential conjecture is that sellers may be marketing-effectiveness driven, and buyers may be transaction cost efficiency driven. Second, our findings add to the criticism of transaction cost economics theory, and that the target of many online firms is not to save transaction costs, but to achieve growth (Ghoshal & Moran 1996).

Our research supports the idea that firms with a strategy of market extension tend to succeed online (Hussin et al., 2002; Raymond et al., 2005). By introducing entrepreneurial motivation theory (Acs, 2007; Wagner, 2005) to analyze firm EM adoption motivation, we provide a richer understanding of its substance. Among firms with a market expansion strategy, some stumbled into using EMs reactively (necessity motivation) in the sense that extending sales channel has become a necessity. Others were more prepared with a clear strategy (entrepreneurial motivation) and business opportunities of higher profit margin. Both types of motivation can lead an online vendor to succeed, but firms driven by opportunity motivation are more likely to succeed.

This research adds to the theory of RBV and business IT value research by opening the black box of digital organizational capabilities in the context of B2B EMs and SME online vendors. Eight Internet-leveraged digital organizational capabilities were detected from the coding analysis. Among them online marketing capability was the most stressed, and price and low cost capability was the least mentioned by successful SME online vendors.

We argue that Internet leveraged digital capabilities are combinations of organizational assets and eCommerce technologies, and such relationships can be both complementary (Bhatt & Grover, 2005; Brynjolfsson & Hitt, 1998; Brynjolfsson et al., 2002; Mata et al., 1995; Wade & Hulland, 2004) and embedded (Kohli & Grover, 2008). For online marketing capabilities, eCommerce management capability, learning capabilities and online social networking, the embeddedness of eCommerce technology is more visible, while other capabilities, such as product and service quality capability, low price and cost capability, are more likely to serve as complementary assets that enhance the effectiveness of EM use. Our research contributes to the theory of eCommerce competitive advantage as previous research has focused on complementary effects, while ignoring embeddedness (Zhu, 2004a; Zhuang & Lederer, 2006).

This study reveals that cultural contexts can influence organizational capabilities in eCommerce. Literature from western countries suggests that EMs are rule based impersonal trading platforms, eliminating the importance of personal relationships and accrued social capital (Hsiao, 2003). On the contrary, we found that successful Chinese online vendors continue to engage in network building activities. This means that Guanxi is still important online, but it takes a different form by leveraging online social technologies such as instant message tools, forums, and chat groups (Ou et al., 2008), accompanied by occasional offline meetings. The persistence of the Chinese Guanxi culture

(Davies et al., 1995; Park & Luo, 2001) also helps explain the relative importance of “online social networking” among all the factors affecting online company success.

## MANAGERIAL IMPLICATIONS

This research provides managerial implications for both SME online vendors and B2B EM operators. SME online vendors need to understand that orders are not a natural result of paying membership fees to EMs and building simple websites. Winning business through online channels involves Internet-leveraged organizational capability building. This requires restructuring work procedures, processes, and activities in incumbent firms, or building from scratch the capabilities that are compatible with online selling if they are new startup companies. Dynamic capabilities such as learning and social networking capabilities can help firms to renew/build Internet selling capabilities.

B2B EMs should focus on helping SME online vendors to develop Internet leveraged organizational capabilities by facilitating their training. Major B2B EMs in China, such as *Alibaba* and *Dunhuang*, offer education and training programs to users, which have proven to be effective channels to help assimilate EM technology.

Due to the persistence of Chinese Guanxi culture online, B2B EMs should integrate social networking functions such as forums and blogs into their marketplaces. Several B2B EMs currently offer forums and blogs, but vendor activities and identities are not tightly integrated into their marketplaces. This research indicates that SME online vendors have already invested significant time and resources in building their personalities and reputations using forums and blogs. Integrating social network functions into online marketplaces would help to preserve that investment.



## RESEARCH LIMITATIONS AND FUTURE RESEARCH OPPORTUNITIES

Although the content analysis that we performed on the 155 cases is very illustrative, this paper has certain limitations. First, the cases were taken from published news reports which were not specifically designed for the purpose of this study. The reports could be biased and, although we have taken measures to reduce potential bias by eliminating unqualified cases, bias may still exist. However, we think our methodology has been very helpful in building a preliminary theory that helps to explain SME online vendor success. Second, the conclusions we derived are based on Chinese company case stories. The generalizability of the results to SMEs in other countries is limited because small businesses may exhibit different Internet usage patterns in different countries (Kartiwi & MacGregor, 2007).

Future research can be conducted in the following directions. First, this is a typical exploratory study, and confirmatory analysis is needed in future studies, including the development of suitable instruments to measure the key constructs proposed by this research, using large scale sampling, survey data collection, and statistical data analysis, to strengthen the conclusions of this research. Second, we have proposed the concept of necessity and opportunity motivation of EM adoption. Future research can systematically identify the impact of these concepts on firm performance, including the identification of relevant moderating and mediating factors. At the same time, cross-country comparisons would also be interesting. Do firms in developed countries have less motivation in the adoption of EMs than developing countries? Finally, since Guanxi and networking capability is still important in online business, more research should be done in this field. For example, how do business people make friends online? What are the benefits and drawbacks of making friends online? How can technical support best assist business friendship making online? These are potential questions that future research could address.

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## APPENDIX

Table A1. Coding information

		Number of companies coded	Inter-coder agreement
			Cohen's Kappa
Transaction cost saving		17	0.866
Expanding sales- reactive		35	0.726
Expanding sales- proactive		64	0.751
Promoting new brand		15	0.757
Low price and cost reduction capability		21	0.678
Product and service quality		49	0.764
Product innovation		50	0.667
ECommerce attitude		62	0.598
ECommerce culture		16	0.697
ECommerce management capability		32	0.712
Learning		45	0.798
Marketing capability	Blog	37	0.921
	Forum	34	0.844
	Selection of B2B platform	69	0.617
	Search engine marketing	47	0.751
	Online product presentation and communications	68	0.737
	Others	34	N/A
Social network	MSN	5	0.885
	Online vendor alliances	9	0.885
	Others	9	N/A