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Value Creation in B2B E-Markets of China: A Practical Perspective

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Abstract

In China, the development of e-market has unique characteristics in the transactional processes and market mechanisms, which relate largely to the current industry structure, financial infrastructure and organization structure. This paper seeks to develop a conceptual model of B2B e-market value creation strategy, and can also be used to highlight the complexity of such activities for Chinese B2B e-markets. A process-oriented approach to modelling the value of e-market, rather than strategic position theory or a simple descriptive approach, is found to be more suitable and has been selected. The model consists of two dimensions: the e-commerce process and the controlling complexity. We apply the model in an actual Chinese B2B e-market (Alibaba.com). The crucial value creation activities and strategies in the four phases of e-commerce process are identified, and the controlling complexity of these activities is evaluated in the model. The model offers an effective approach to study the dynamic structure of transactional processes and bring into light the special issues of e-market development in China. Managers can resort to the model to offer more value to their customers by designing an effective e-market process.

Keywords: B2B E-Market Model, E-commerce process, Controlling complexity, Value creation factor and E-commerce strategies.

Introduction

E-commerce is revitalizing the need and the value to innovate the business process. It opens up new forms of business relationships and enables new markets, new business, and new marketing paradigms [2] [7]. The B2B e-market is one of the underlying enabling technologies. It is an e-market between enterprises, which creates a new trading mechanism in a highly efficient and effective manner. It assembles numerous buyers and sellers into on-line transactions. Both sides “know” each other through issuing and searching of business information, then negotiating and completing a contract over the Internet. As B2B transactions are increasing on the Internet, it has become critical for firms to rely on Web-based supply chains or e-supply chains in order to providing almost real-time response to market conditions [9][14][22][27][29]. SAP AG from

Germany reported that an enterprise using B2B e-business could reduce its purchase cost by 57.7%, its transactional cost by 30-70%, and its inventory cost by 25-40% [25].

This research seeks to develop a conceptual model that is suitable for analysing the B2B e-markets in China. Such a model should help us to seek effective strategies in creating an effective e-market in Chinese business environment. We first introduce the development of e-markets in China, and highlight the unfavourable business environment of implementing e-commerce. Then we provide a literature review on value creation in e-market, since an effective e-market strategy should focus on providing real value to customers. Among all approaches addressing e-market value creation, we choose the process-oriented approach due to its relevance. Next, we develop a conceptual model with two dimensions: the e-commerce process and the controlling complexity. We then analyze Alibaba, a B2B e-market in China, using the proposed B2B E-Market Model. The result highlights (1) the critical value creation activities in each phase of the process, and (2) the importance of transactional controlling, especially in the context of China. The strategies of controlling transactions are also illustrated. Our finding offers a new way of studying the B2B e-market to explore e-commerce strategies and innovative market mechanisms directed towards the needs of customers.

The Development of B2B Electronic Markets In China

China is in the midst of industrialization, modernization and informationization. Various aspects of the consumer economy such as purchasing habits, modes of exchange, and payment methods are different from those of the developed countries. Information technology has not yet been widely deployed in enterprises. It is expected that the development of full-scale e-commerce processes in B2B e-markets will encounter many obstacles [18] [35].

First, e-commerce is not in place. Hempel and Kwong [13] comment that the network infrastructure is less of a bottleneck in China today, but the business infrastructure presents special problems, such as financial, logistic and legal infrastructures. Setting up a successful B2B e-market in emerging economies may require the creation of basic services that are taken for granted in developed economies. For example, electronic payment systems and the associated regulations are not yet in place in China. Some purchasing in small enterprises is still made with cash. Many legal issues associated with e-commerce have not been addressed. Moreover it will take time for new methods, procedures, and transactional processing to be accepted due to human resistance of change in corporations and organisations. Inefficient transportation systems and the absence of professional distribution outsourcers are preventing businesses from going completely on-line since they must depend on their own distribution capabilities.

Second, there is a lack of solid understanding about e-commerce among managers. Corporate culture in majority of the enterprises does not promote the innovation of information technology. Business alliances and partnerships are dominated by longstanding personal "old-boys" connections [18] [34]. Moreover, the enterprise information system is under-utilized. Because of these factors, most business executives are hesitant to implement e-commerce strategy under current conditions. A random sample of 1300 managers in 520 large state-owned enterprises and local backbone enterprises released by the National Council on Economics and Commerce in 2001 indicated that 69.1 percent of businesses host their own web sites, 21.6 percent of enterprises had a proposed e-commerce strategy, 4.1 percent of them completed procurement over the Internet and 3.4 percent of them engaged in Internet marketing [15].

Third, trust and security are important barriers to the development of e-commerce in China. Although China has begun to establish its credit system, credit problems have already plagued the Chinese economy. It is estimated that the loss due to the immature credit system and regulation, is 10-20% of the national GDP [31]. Data from State Administration of Industry & Commerce indicate that, each year the loss from contract frauds and violations is about 5.5 billion RMB, and the loss from low quality and counterfeits is around 200 billion RMB [31]. Lack of credit is a problem caused by the old system of the planned economy in China [30]. In the planned economy, the government controlled companies, and credit system was not in place since it was considered a

mechanism of the market economy. So when the Chinese economy transforms from planned to transitional economy, it needs to build credit system from scratch. The virtual characteristics of the online business impose special challenges to trust and credit problems [3] [12]. In China, the online frauds increase each year [21] [32]. Among the top ten complaints that were announced by the China Association for Quality Promotion, complaints about online frauds ranked fifth, after food, automobiles, appliances, and travel [11].

Under these limiting conditions, development of e-markets has unique characteristics in the transactional processes and value creation activities, which relate largely to the current business infrastructure and economic environment.

Theoretical Approaches Modelling the Value of E-Markets

The value of e-markets has been modelled in different approaches. They are (1) general description of e-market functionalities (2) strategic positioning of e-markets (3) process models of e-markets.

Early researchers of e-markets tend to enumerate the values of e-markets by describing the activities and functionalities of e-markets. Malone, Yates et al. [17] suggest that the value of e-market is electronic brokerage effect, in contrast to the electronic integration effects of electronic hierarchies. Bakos [1] suggests the functions of e-markets, including matching buyers and sellers, facilitation of transactions such as settlement and logistics, and building institutional infrastructures such as rules and regulations. Daniel et al. [5] propose the following potential impacts of B2B e-commerce, including transactional cost reduction, improved market efficiency and management decision, and changed business process, etc. Many researchers also realize that e-markets have evolved from offering simple aggregation, to facilitating transactions, and finally to supporting supply chain management [8] [23].

Due to the extension of e-market functionalities, researchers realize that different e-market functions offer different value to e-market users. The significance and relevancy of the value depend on market conditions, product characteristics, etc. So researchers adopt a contingency approach to address the value of e-markets. Based on strategic positioning theory, Christiaanse and Markus [4] suggest that a market with good match among e-market value propositions, value activities, market conditions, product characteristics and ownership structures of e-markets, generates greater value and higher performance. Research with similar results includes Lennstrand et al.'s and Dou and Chou's results [16] [6].

Previous two approaches are descriptions of the value of e-markets on a macro level. The process approach provides another insight that can help researchers to tap into the micro level of e-market value. It is normally recognized that the performance of IT can be classified into three types, financial performance, process performance and satisfaction. However, financial performance of IT is hard to be isolated from performance improvement caused by other organisational actions, and satisfaction indicator is too subjective and general, offering little managerial implication. When developing an integrative framework of IT business value, Melville et al. [19] conclude that the IT business value is mostly realized through its impact on intermediate processes of the organisation. Business processes differ in their complexity. High degree of complexity leads to a context-contingent set of synergistic combinations of IT and other organisational resources, including workplace practices, change initiatives, organisational structure, and financial condition. Trading partners play a critical role in such synergistic combination.

Process approach is also used to analyse e-commerce [10] [28]. Grieger [10] identifies some supply chain processes that are offered in e-markets, such as order fulfilment, procurement, demand forecasting, return management, etc. He also discusses how to overcome "half baked" problem of offering supply chain processes in e-markets. However, most e-markets do not support sophisticated supply chain processes, but strive to support the full transaction online. Some researchers focus on the transactional process. For example, Selz and Schubert [26] divide the

transactional process into four phases: information, agreement, settlement and communication phase. Schmid and Lindemann [24] change last phase into an after-sales phase. The process approach is adopted in developing a conceptual model since its analytical characteristic allows us to go into greater details on what are the effective strategies to build a B2B e-market in China. Selz and Schuber's and Schmid and Lindemann's four phase model of ecommerce provides insights in developing our framework.

The B2B E-Market Model

In this section, the B2B e-market model is developed to analyse the activities, structure, and governance of e-commerce process so as to explore value creation factors. The B2B e-market model involves a matrix of two dimensions: transactional process and controlling complexity. Four phases of transactional process are identified: information, negotiation, payment, and delivery. They are connected and sequenced according to the trading process under the environment of Chinese e-market. The control dimension includes supervising and controlling of transactional process for security and trust for successful B2B e-market in China. If the transactional process is common for all e-markets, the dimension of controlling complexity allows us to illustrate the uniqueness of B2B e-market development in China. The Model aims at secured and reliable e-commerce processes that deliver significant business value, ranging from strategic challenges to operational efficiency and effectiveness issues. The B2B e-market model is shown in Table 1 and offers a relevant perspective for exploring critical strategy components of value creation.

Table 1 B2B E-Market Model

Transaction Process Controlling Complexity	Information	Negotiation	Payment	Delivery
Low	Providing quality information to potential users			
Medium		Matching buyers with sellers and delivering exchange mechanisms		
High			Controlling the risk for secure and reliable transactions	Managing collaboration

The value creation factors in the four phases along with the present business climate are outlined as follows:

- *Information Phase: Providing quality information to potential users*
In the information phase, inexhaustible information about business transactions and collaboration can be aggregated and disseminated. The crucial duties for the e-market involve managing information content, providing the appropriate classified information, and helping buyers and sellers to issue and obtain information more quickly and easily. Customization is another recommended strategy to enhance the value of information that is available for each buyer/seller.
- *Negotiation Phase: Matching buyers with sellers and creating exchange mechanisms*
Electronic market managers need to integrate IT technologies such as on-line negotiations (including tendering and bidding), contract signing, account management, etc. The principal challenges facing e-markets are to lay down rules of exchange that are rooted in a neutral and effective process to create a fair and efficient negotiation experience for customers, and offering transactional services to facilitate purchasing decision making.
- *Payment Phase: Controlling the risk for secure and reliable transactions*
In the payment phase, monetary transactions take place between the buyers and sellers.

Customers normally demand secure and reliable but flexible payment. Effectively controlling the risk in on-line transactional settlement, as well as supporting a range of payment methods offered by various financial institutions, are two recommended strategies to meet the above needs. While the financial system in China is being modernized, the e-market needs to be creative in identifying alternative expedient payment methods in order to build a competitive advantage.

- *Delivery Phase: Managing collaboration*

The delivery phase entails an end-to-end goods delivery from suppliers to buyers. Together with payment phase, they formed the fulfilment process. Thus shipment of bulk commodities involves multiple players from various transportation and storage providers to customs agents and banks. As an emerging industrial economy, China does not yet have the logistics infrastructure to support on-line commerce in an effective and efficient manner. The most critical challenge for managers has been the ability to ensure the smooth flow of information, products and services among multiple players involved in the delivery process and payment phases. Collaboration is a critical component of customer satisfaction in the electronic market.

The information phase and the negotiation phase are characterized by management of high reach and value of information, and by a focus on matching buyers with sellers for making transactions and creating exchange mechanisms. The risk control mechanism and the management of new forms of collaboration among all relevant players characterize the payment phase and the delivery phase throughout the fulfilment process. Both phases emphasize processes that enable the full range of transactions and its governance. It is noticeable that the e-market value generation is associated with designing, building and managing e-commerce process. With the unique nature of e-commerce of China the Model is the conceptual basis for analyzing and understanding the primary e-commerce activities and the innovative e-commerce strategies of electronic market in emerging markets.

Applying the Model in a B2B e-Market in China

We used case study to apply the model in a B2B e-market in China that can help us to highlight some issues in Chinese B2B e-market value creation. Case research is “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” [33]. It is the most suitable method for new phenomena for which new theories need to be generated, or when constructs need to be polished in a real life setting[20] [33]. Since e-markets are new phenomena of the Internet age, and especially new in China, theories are to be built, and the real life context such as business infrastructure of a country cannot be separated from the e-market phenomenon, case study is a proper choice for this research.

We investigated Alibaba, a B2B e-market in China, in 2006. It was chosen due to its excellent design of transactional processes. Interviews and onsite observations were our primary data collection methods. We interviewed cooperate executives in the e-market and some staffs in Alibaba, for a total of 8 hours. The onsite observation of their business process in Alibaba lasted one day. We also attended some conferences hosted by the e-market, learned from peers who have investigated this company, and received the secondary data from the company websites. One research assistant even attended a seven-day training of the Alibaba transactional process and was granted a certificate. Multiple sources of data collection precluded our case research from subjectivity. During case investigation, we were particularly interested in its development of the on-line transactional process using web technology, and the way it handled security and trust issues, because of their importance in alleviating buyers and sellers’ concerns and attracting online trading in China. Our research results can be tied to the theories of e-markets, offering another important way of analyzing e-market value creation factors and strategies.

Alibaba

Alibaba is the dominant e-market in China, with a market share of more than 60%. Its two main sites, Alibaba International (www.alibaba.com) and Alibaba China (www.China.Alibaba.com), were established in 1998 in Hongkong and in Hangzhou which is a medium-sized city located in east China. Alibaba International is an English site with international trade orientation. It now has 300,000 visits daily. Alibaba China is a Chinese site for domestic trade. It has more than 7 million registered users. Its featured functions are product listing, requesting for quote/information, real time negotiation (TradeManager), buyer/seller credit reporting (CreditDirect), news and business intelligence, online payment, online community, online auction, search engine advertising, hosting trade shows, etc. Users are charged with an annual subscription fee for the above services.

Alibaba.com offers an open environment for SMEs, who can join with minimum requirements. It ensures reliable online payment process through a third-party payment website- PayDirect Bao. Its premium TrustPass® Membership is another notable credit enhancing mechanism. Only members who have completed an authentication and verification procedure conducted by a third-party credit agency are granted TrustPass® qualification. TrustPass® serves to provide transparency regarding the identity and legitimacy of sellers and seller's potential trading partners with Alibaba.com. Information quality for TrustPass® membership is also guaranteed, and thus it increases buyer confidence. More than 85% of buyers on Alibaba.com prefer to do business with members who have the TrustPass® qualification.

The transactional process of Alibaba.com is shown in the following Figure 1. In the transactional processes Alibaba provides the credit mechanism through (1) TrustPass® member identity verification and (2) the third-party payment websites for the buyers and suppliers to make their transaction directly with one another.

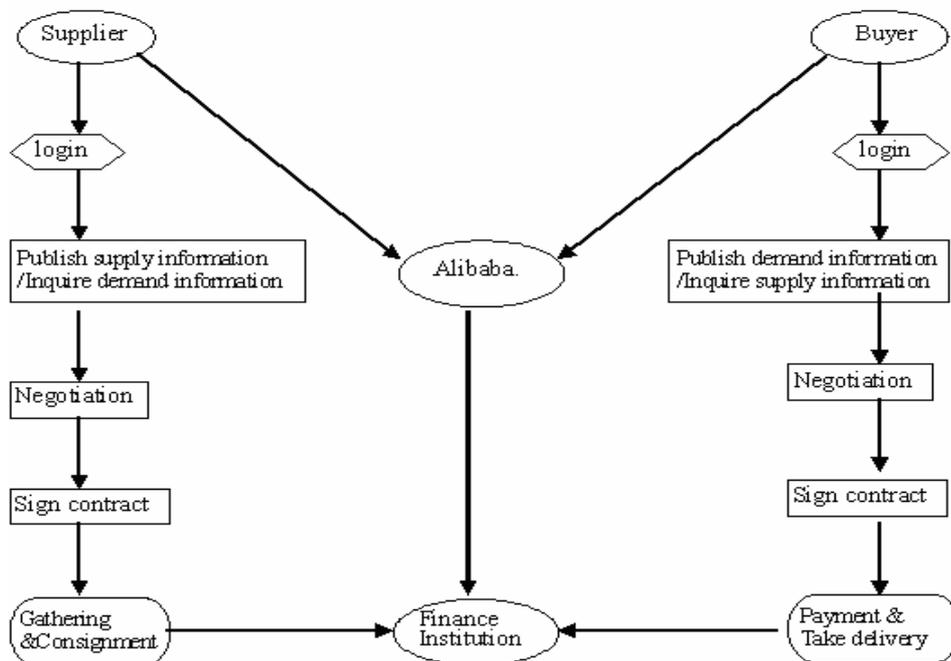


Figure 1. The transaction process of Alibaba.com

Value Creation of Alibaba Activities

Table 2 illustrates Alibaba’s main e-commerce activities in the framework of the conceptual model. It provides an insight on the execution of the successful strategy utilizing the existing resources in the current business climate of China. The main activities of this e-market in each phase of transaction are outlined, and the complexity of controlling these activities to guarantee a secure and trustable transaction is evaluated.

- Personalized and Customized Services in Alibaba

In the information and the negotiation phases of the Model, Alibaba offers personalized and customized services. Hundreds of product categories from 42 industries are presented in this market. Members are offered a utility called “ali-assistant” (or My Alibaba) to manage their product listing and internal web sites. A wide array of trading functions are available for buyers and sellers to choose from, such as online auctions, online categories hosted in each member’s site, and real time negotiation conducted through “Trade Manager”. The staff in Alibaba is not as much involved in matching buyers and sellers. However, the less human involvement of Alibaba is compensated by its three services: Ali-college, Ali-forum and TrustPass®. Ali-college is an online school maintained by Alibaba, and its purpose is to educate users on how to conduct business online. Ali-forum is an online discussion forum and also offers blog hosting service. TrustPass® is a credit rating and user identity authentication system. Online businessman can also learn information about products and business credits from Ali-forum and TrustPass® services. So through these three services, Alibaba users can be better serviced with reduced help from human agents.

Table 2: Alibaba’s e-commerce activities

Transaction Process Controlling Complexity	Information	Negotiation	Payment	Delivery
Low	Personalized and Customized Services <u>Alibaba:</u> Products from 42 industries; Ali-assistant; Ali-college; Ali-forum;			
Medium		Personalized and Customized Services <u>Alibaba:</u> Online catalogs Online auctions TrustPass TradeManager		
High			Risk Control of the fulfillment Process <u>Alibaba:</u> Supporting multiple payment methods Ali-pay, a third party payment service, effectively control the risk in the payment phases with lower operating cost	Strategic partners network <u>Alibaba:</u> The bank partner alliances Ali-pay partially controls the risks in the delivery TradeManager

- Risk Control of the fulfilment Process in Alibaba

Alibaba's payment process is intertwined with the delivery phase. It involves multiple players from transportation and storage providers to customs agents and banks. Alibaba also focuses on controlling of transactional risks presented in the payment and delivery phase. Alibaba does not supervise the entire process and does not help arrange deliveries. However, by offering Ali-pay (or called as Payment Bao), a third party payment service, Alibaba effectively control the risk in the payment and delivery phases with lower operating cost. In Ali-pay, money is held by Ali-pay before buyers confirm receipt and quality of goods. The entire process of Ali-pay is explained as follows.

After a buyer and a seller reach an agreement on the transaction, the buyer first sends money to Ali-pay electronically through his Ali-pay account. Then Ali-pay notifies the seller of receipt of funds, and requests sellers to deliver the goods. When the buyer receives the goods, he inspects the goods, and makes confirmation to Ali-pay. Upon the buyer's confirmation, Ali-pay releases the money to the seller's Ali-pay account. The seller can choose to leave the money in his/her Ali-pay account, or transfer money to his bank account. If the buyer does not agree with the quality of the goods or receive the goods, a return process of either money or goods is initiated automatically. Buyers and sellers are allowed to negotiate the terms of return either online or offline. If they have disputes regarding the returns, Ali-pay agents will intervene in the process. Both parties can submit proofs, such as receipts from post offices, negation records in "TradeManager", and emails about the transactions. Ali-pay agent will then make the judgement on the case. Three days after the transaction, the buyer and seller can vote for each other, or leave comments online. The votes or comments will be kept in TrustPass service, and made available for new trading partners to check the credit history of the buyer or seller. Through such a process participated by users themselves, Alibaba can effectively prevent the fraudulent behaviours of users, and at the same time reduce the need for the involvement of human agents. Alibaba's brand awareness and reputation are enhanced by users' promotion via Ali-forum and TrustPass services over Internet.

- Strategic partners network in Alibaba

The delivery phase entails an end-to-end goods delivery from suppliers to buyers. Together with payment phase, they formed the fulfilment process. In B2B e-markets, one major concern is to carry out contract deals safely and reliably. In China, it is still possible that arrears and quality issues may occur in trading as in other nations. Apparently both parties are worried more about these unavoidable problems in the virtual market, and have reservations about the security and trust in online trading. For example, if a buyer is afraid of the quality of the products after the payment, then the quality inspection and refund should be warranted. In the B2B e-market, it needs a strategic partner's network formed by the bank, the transportation entity and the quality inspection entity working together for a secure and reliable transactional process. Alibaba maintains a network of business partners, including many banks and third parties. The third parties are mainly business credit rating companies and authentication agents. Although Alibaba has tried to maintain good relationships with the government, the government is not involved in its business since it is a private entity. Furthermore, due to the complexity and cost of maintaining a logistic network, Alibaba does not help the buyer or seller to arrange the delivery of goods. However, the Ali-pay service can partially alleviate the problem of quality inspection and refund since Ali-pay service supports product return and refund. When there are disputes, Ali-pay agents also contact logistics companies for information verification.

In summary Alibaba provide support in all four phases of transaction, increasing value either by controlling transactional risks, or by reducing transactional cost and enhancing transactional efficiency. Even though Alibaba has weaker support in the delivery phase, it cleverly allows participant involvement from both sides in meeting the contract. As a result it satisfies customers and yet reduces costs with Ali-Pay service only. It is interesting that buyer and seller prefer to operate their own online transaction (such as arrangement of deliveries and confirming quality of goods) under a controlled transactional risk. Alibaba has matched beyond the needs of users, so it is actually considered best successful e-market in China. It is also noticeable that Alibaba's transactional process design requires less human involvement; it also increases the scalability of Alibaba's network and reduces its operational cost.

- The controlling complexity

The degree of controlling complexity varies along the four phases, from “low”, “medium” to “high”. In the information phase, the degree of controlling complexity in facilitating information publishing and searching is low. Inexhaustible data about all sorts of buying and selling business is aggregated and disseminated. It is simple and straightforward to fulfil this function with Internet technology. Most e-markets in China have this basic capability. The payment and delivery phases entail an end-to-end goods delivery and monetary transaction from suppliers to buyers. Shipment of bulk commodities involves multiple players from various transportation and storage providers, to freighter forwarders and carriers, to customs agents and banks. The e-market has to coordinate with all the players during the payment and shipping process so that the right information is delivered to the right person at the right time, and to supervise the execution of the transaction in a secure and reliable manner. This leads to greater flexibility and better control of information sharing among buyers, suppliers and partners by using its web enabled e-commerce system. It is necessary to create a partner network over the Internet to accomplish collaboration management, adding a higher degree of complexity controlling in both phases. In e-commerce, payment and delivery processes must be accurate in order to satisfy customer needs. Consequently, these two processes require intense scrutiny to ensure that both parties’ are satisfied in the exchange.

This model implies a planned and controlled approach in identifying and integrating different business components and information systems. With the unique business environment in China, the model is the conceptual basis for analyzing and understanding the primary e-commerce activities and the innovative e-commerce strategies of electronic market in emerging markets.

Conclusion

The evolving B2B e-market in China defines a new challenging field for research within e-commerce. To facilitate the development, we have attempted to approach the value creation strategies of B2B e-market in real-life context, and to describe and analyse them from a process perspective. A B2B E-Market Model based on the e-commerce process is developed to study e-commerce value creation activities within the context of the four phases: information, negotiation, payment, and delivery. The Model illustrates the relationship between the business components required to support the e-commerce processes with the value creation factor and controlling complexity. It enables us to capture and study the critical strategy and activities rooted in the e-commerce process, which targets customer’s needs and have a direct impact on value creation under current limiting conditions. We apply the B2B E-Market Model to Alibaba, a B2B e-market in China. The critical e-commerce activities emerge from the analysis of the e-commerce process. They are personalized and customized services, Risk control of transactional process, and strategic partner’s network. Both payment and delivery are important business activities that reflect the effectiveness of the business strategies. The B2B E-Market Model provides guideline for managers to identify the effective strategy, crucial business activities and value creation opportunities in each of the four phases of e-commerce process. These strategies would help e-market operator to enhance the potential to achieving and sustaining a new level of strategic performance and a more competitive position in a rapidly changing B2B electronic marketplace of China.

Finally, we want to point out a few limitations of the study. We adopted a process perspective to analyse the value creation factors of Chinese e-market, and ignored other perspectives. Future research can be directed towards other perspectives such as customer oriented marketing approach. We only analyze an e-market in China. In the future, researchers can apply the e-market process model to analyse the e-markets in other developing countries, and to see how the unique business environment characteristics of these countries bring variations in value creation strategies for their e-markets.

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