

# THE ADOPTION OF INTERNET-BASED BUSINESS-TO-BUSINESS E-MARKETPLACES AMONG SMALL AND MEDIUM-SIZED ENTERPRISES IN THEIR INTERNATIONAL MARKETING PRACTICES

Guo, Rui, National University of Singapore, Department of Information Systems, 3 Science Drive 2, 117543, guorui@comp.nus.edu.sg

Xu, Yunjie, National University of Singapore, Department of Information Systems, 3 Science Drive 2, 117543, xuyj@comp.nus.edu.sg

## Abstract

*This study investigates the major reasons for e-marketplace adoption among SMEs in their international marketing practices. Based on organizational innovation theories, resource-based view theories of the firm, and former studies in the IS adoption research, a three match-based framework was proposed for IS innovation adoption among organizations. And based on this framework, we proposed a parsimonious model in which SMEs' adoption decision of Internet-based B2B e-marketplace were affected by their 1) perceived performance gap in their international marketing practices, 2) perceived potential utility in new market development from adoption, and 3) perceived resource readiness for adoption and implementation. Our empirical study shows that the perceived performance gap gives a firm incentive to try and adopt new marketing approaches, whereas the perceived potential utility and the perceived resource readiness showed how well the e-marketplace solution fits with the firm's situation. Jointly, these three factors explained a SME's adoption decision for e-marketplace initiatives.*

*Keywords: E-marketplaces, Adoption, SME*

## 1 INTRODUCTION

The advent of Internet is revolutionizing international marketing practices and has made it easier to market products and services across the globe for SMEs (Small and Medium-Sized Enterprises) (Chaffey et al. 2000, Hamill 1997, Poon and Swatman 1997, Quelch and Klein 1996). Although the Internet by its very nature threatens the existence of "middlemen", such as distributors, brokers, or wholesalers, a major problem with marketing through Internet is that (normally) the customer looks for the supplier, rather than the other way round (Bennett 1997). Displaying advertising on web pages other than the firm's own is possible, but might not be well-received (Bennett 1997). Moreover, as more and more businesses establish WWW presences, searching for potential suppliers will become impossible without the aid of high-quality directories to guide people towards relevant sites (Bennett 1997). Thus, with the exponential growth of worldwide Internet adoption and the rapidly increasing use of the World Wide Web as a platform for e-commerce, wholly new markets for electronic intermediaries, or cybermediaries (Sarkar et al. 1995), have been created.

Internet-based B2B e-marketplaces are a kind of inter-organizational information system in the online environment, in which multiple buyers and sellers come together to gather information and exchange goods and services (Bakos 1991, 1997, 1998, Graham et al. 1996, Malone et al. 1987, Senn 1996). They serve as electronic intermediaries to facilitate the exchange of information about products and/or support business transactions between participating buyers and sellers (Bakos 1998, Sarka et al. 1995).

With advances in information and communication technologies, it is possible for those new intermediaries to aggregate a very large amount of information about the buyers and sellers of an industry, and to bring a larger number of potential buyers and suppliers together without spatial and temporal distances, which is not feasible or costly offline (Dai and Kauffman 2002). Thus, through the B2B e-marketplace, SMEs can gain access to international markets while not have to incur nontrivial up-front costs associated with searching for new market, negotiating contracts, and monitoring those contracts to ensure performance, which may be too formidable for them.

The rapid proliferation of Internet-based B2B e-marketplaces in recent years has attracted a growing number of academic studies. However, most of these studies are conceptual or managerial in their approach (e.g. Chircu and Kauffman 2000, Dai and Kauffman 2002, Malone et al. 1987, Memishi 2001, Senn 1996, Tumolo 2001); few are empirical (e.g. Bailey and Bakos 1997, Choudhury et al 1998, Grewal et al. 2001). And they examine e-markets more from the market makers' standpoint than from the users' perspective (e.g. Bailey and Bakos 1997, Bloch and Catfolis 2001, Dai and Kauffman 2002, Malone 1987, Memishi 2001, Tumolo 2001). Thus, though the Internet-based B2B e-marketplaces are becoming more and more diffused among SMEs, the phenomenon of e-marketplace adoption is still complex and continues to evolve. The drivers for the seller's adoption of B2B e-marketplaces are not clear, let alone SMEs' e-marketplace adoption in the international marketing context.

Since we lack a full understanding of SMEs' adoption of Internet-based B2B e-marketplace in the international marketing context, the purpose of this study is to investigate the drivers for the adoption of B2B e-marketplaces among SMEs in their international marketing practices. We would like to discover what forces "drove" SMEs to adopt Internet-based B2B e-marketplaces and uncover key factors affecting such adoption decision. In this paper, an integrated e-marketplace adoption model of SMEs in their international marketing practices will be empirically assessed for its applicability in the real world. Our research question is:

*What are the key factors that affect SMEs' adoption decision of the Internet-based B2B e-marketplaces in their international marketing practices?*

## **2 EXPECTED CONTRIBUTIONS**

E-marketplaces are important empirical phenomena, because they are theoretically linked to significant economic and business effects (Bakos 1997, Malone et al. 1987). As one of the first empirical studies to investigate factors influencing small businesses' participation in e-marketplaces, this research work provides a clear picture of adoption/non-adoption decisions in SMEs. It enables us to understand the motivators and inhibitors affecting small supplier firms' potential participation in the e-marketplace evolution and elicit a clearer understanding of how SMEs measure the results of an e-marketplace initiative. It supplements former studies which mainly focus on the buyers' adoption behavior and contributes to our cumulative knowledge in the field of e-marketplace and IOS adoption. It will provide the reference value for the future research studies in other electronic, inter-firm linkages. Moreover, it allows practitioners to identify and evaluate fundamental e-marketplace attributes as well as strategies that would enhance the likelihood of adoption by small firms.

SMEs are recognized to be important to economic activity, employment, innovation and wealth creation in many countries (OECD 2002). Since SMEs' management issues, problems and opportunities are very different from those of large corporations, there is the need to focus specifically on this segment. Moreover, as high-growth SMEs are largely responsible for increases in the economic development of industrialized countries, improving the international contributions of the small business sectors is widely regarded as an increasingly important policy priority and the focus of public policy support in many countries (Bell et al. 2004). Thus, following the trend of the global market served by the e-business, this research contributes to a further understanding of the nature and state of SMEs' internationalization under the impact of information technologies.

Based on organizational innovation theories, resource-based view theories of the firm, and former studies in the IS adoption research, a three match-based framework was proposed for IS innovation adoption among organizations. This framework integrated multiple theoretical streams in organizational innovation adoption research and provided a much clearer classification of crucial factors affecting IS innovation adoption. Theoretically, this framework gave a deeper insight into the adoption decision process and provided a systematical explanation of why and how the crucial factors will influence a firm's adoption decisions of an IS innovation. It answers the request that more work needs to be done to integrate multiple theoretical streams, and more sophisticated techniques are necessary for developing more realistic models that allow the different effects on adoption to be analyzed (Fichman 2000).

### **3 THEORETICAL FOUNDATIONS AND RESEARCH FRAMEWORK**

Although empirical studies in e-marketplace participation are scant, there is a rich stream of more generally research that studies IS adoption and diffusion. As B2B e-market is essentially a multilateral inter-organizational information system built on open network technologies (Choudhury et al. 1998, Dai and Kauffman 2002), it may be fruitful to refer to the theoretical foundations of former IS adoption literature to construct the theoretical foundations of this study.

The theoretical foundations for most IS adoption research are found in the organization innovation literature (e.g. Rogors 1995; Tornatzky and Fleischer 1990) which studies the process of technology diffusion and the factors influencing technology adoption decisions. In previous IS adoption research, IS researchers have been drawing functional parallels between IS adoption and technological innovation adoption and emphasizing the need for viewing IS adoption from the context of the organizational introduction of a technological innovation (McFarlan and McKenney 1982, Zmud 1984). Since IS innovation may be broadly defined as innovation in the organizational application of digital computer and communications technologies, the organizational innovation theory offers an especially promising route for the developing our new framework for IS adoption.

In general, organizational innovation adoption process is normally explained through a stage model. The assumption of the stage-model approach to describing this process says that there is a progression of identifiable phases or categories of behaviours which bring the adopting unit more or less closer to the ultimate decision (Rogers 1995, Zaltman et al. 1973). According to Rogers (1995), there are two sub-stages—agenda-setting and matching—in the initiation stage in which the firm collect information, builds knowledge of the innovation, examines its relevance and appropriateness to the organization, and makes a decision whether to adopt the innovation.

#### **3.1 Agenda-Setting**

The agenda-setting occurs in the innovation process when a general organizational problem that may create a perceived need for an innovation is defined. This stage in the innovation process in organizations amounts both to identifying and prioritizing needs and problems on one hand, and to searching the organization's environment to locate innovations of potential usefulness to meet the organizations problems. At this stage, one or more individuals in an organization recognize a need for change usually triggered by the emergence of a performance gap. When organizational decision makers perceive that there is a discrepancy between criteria of satisfactory performance and their actual performance, search for alternative courses of action is likely to increase. This increased search is then likely to facilitate the perception and resulting awareness of new innovations that might be adopted (Zaltman et al. 1973).

### 3.2 Matching

The matching is the stage in the innovation process at which a problem from the organization's agenda is matched with an innovation, and this match is planned and designed. At this stage, the problem is conceptually matched with the innovation to establish how well they fit. If an organization's decision makers conclude that a mismatch of the innovation with the problem would occur, this decision would lead to rejection, terminating the innovation process prior to implementation (Rogers 1995).

### 3.3 Three Assessment Processes for Adoption Decision

Research in these two sub-stages indicates three major processes which determine a firm's adoption decision of a specific IS innovation: 1) performance gap assessment in the agenda-setting stage and 2) innovation's potential utility assessment and 3) firm's adoption ability assessment in the matching stage.

#### 3.3.1 *Performance Gap Assessment*

A performance gap is the discrepancy between an organization's expectations and its actual performance (Rogers 1995). When a discrepancy exists between what an organization is doing and what its decision makers believe it ought to be doing, there is a performance gap (Downs 1966). As the impetus to innovation arises when organizational decision makers perceive that the organization's present course of action is unsatisfactory (Zaltman et al. 1973), the assessment of this gap captures the perceived importance of taking action on an issue and induces stakeholders to apply pressure for actions.

Actually, the notion that a meaningful relationship exists between performance and organizational change can be found in the behavioural theory of the firm (March and Simon 1958, Cyert and March 1963). This body of work suggests that when performance lags aspirations, the firm engages in "problemistic search" (Cyert and March 1963) to identify a remedy to the performance shortfall. Change is often the logical outcome of this search behaviour. From another perspective, if firm performance is above target, managers attempt to avoid actions that may produce below target performance (March and Simon 1958, March and Shapira 1987). That is, for high performing managers, the dangers of falling below target performance dominate attention, and the opportunities for gains are less important. Therefore, when a firm is performing well, decision-makers are risk averse and avoid adopting innovations. As what is argued by Tornatzky and Fleischer (1990), an organization that was performing up to expectation and had prospects to continue to do so for the foreseeable future would have no incentive to initiate change. Hence, this difference between how an organization's members perceive its performance, in comparison to what they feel it should be, give it a strong impetus to search for an innovation in the agenda-setting stage (Rogers 1983, Zaltman et al. 1973).

#### 3.3.2 *Potential Utility Assessment and Adoption Ability Assessment*

The potential utility of an innovation is a measurement of extent to which a firm's problem can be solved by abilities of the innovation without considering the adoption and implementation problems. And the adoption ability is a measurement of extent to which the requirements of an innovation in adoption and implementation can be fulfilled by the organization. The assessments of these two problems jointly determined extent to which a firm's problem is perceived to be solved by the performance of an innovation if it were implemented in the matching stage, because the matching process is a land of reality testing in which the organizations' members attempt to determine the feasibility of the innovation in solving the organization's problem. Such symbolic planning entails

thinking about the anticipated problems that the innovation might encounter if it were implemented (Rogers 1995).

In former innovation adoption research, organizations are often seen in this research as constraints or resistances to innovation adoption, at least to the extent that many problems are usually encountered in attempts to implement an innovation in an organization. Alternatively, these difficulties can be seen as evidence that a particular innovation may not fit well with an organization's perceived problem, or that innovation's expected consequences are perceived by the organizations members as more negative than positive (Van de Ven and Rogers 1988). Likewise, Mohr (1969) pointed out that the willingness to innovate may lead to innovation not only when individuals involved are willing to innovate, but also when the resources for innovation are available. He concluded that it is necessary to consider the interaction between the variables of motivation to innovate and resources available in predicting innovation. Thus, while the potential utility of an innovation gives the evidence whether the solution fit well with the organization's perceived problems, the difficulties of the firm to adopt and implement the innovation can be seen as evidence that the particular innovation may not fit well with an organization's perceived problem, or that the innovation's expected consequences are perceived by the organizations members as more negative than positive either.

### 3.4 Resource-Based View of the Firm

Since IS can be considered as information system resources for the companies (Wade and Hulland 2004), adoption decision of a specific IT asset can be considered as a kind of decision of firm to engage into a specific information resource replacement and/or acquisition. Hence, besides organizational innovation theories, theory of resource based view of the firm also provide as strong theoretical foundation of our new framework as it provides a valuable way for IS researchers to think about how information systems relate to firm strategy and performance. The resource-based view of the firm views the firm as a bundle of resources (Barney 1991, Grant 1991, Penrose 1959, Wernerfelt 1984). It argues that ongoing performance differences among firms might be attributed to the fundamentally different "bundles" (Penrose 1959) of resources that firms use to implement their strategies as the composition of the firm's resource bundle is a source of potentially sustainable competitive advantage (Barney 1991). As firms always seek to pursue competitive advantages, this theory suggests that firms seek to acquire or develop new resources when they find their current resource bundles are not capable of providing sustainable competitive advantage. Then, this expected competitive position might be a meaningful determinant of the kind of new resources to be acquired or developed by the firms.

In IS research field, this theory has been used to resolve the "productivity paradox" and to explain how firms create value from IT assets and organization's skill to leverage IT assets. According to these studies, IS resources rarely contribute a direct influence to sustained competitive advantage. Instead, they form part of a complex chain of assets and capabilities that may lead to sustained performance. Information systems exert their influence on the firm through complementary relationships with other firm assets and capabilities (Benjamin and Levinson 1993, Clemons and Row 1991, Jarvenpaa and Leidner 1998, Powell and Dent-Micallef 1997, Wade and Hulland 2004). Thus, on the one hand, IT resources rarely have a direct influence on sustained competitive advantage (Wade and Hulland 2004). It can generate competitive value only if it leverages preexisting business and human resources in the firm via co-presence or complementarity. On the other hand, effective implementation does not guarantee that the innovation will, in fact, prove beneficial for the organization. An IT solution will have a positive impact on performance only when there is correspondence between its functionality and the needs of the organization (Cooper and Zmud 1990) as the utility of the technology derived from a fit between organizational goals and technology (Simon 1978). Such complementarity suggests that the value of an IT asset is based on both how much its functions fit on a firm's needs and how much it fit on a firm's current resource base.

In sum, resource based view of the firm and resource complementarity of IT business value suggest that: 1) insufficiency of current resources to achieve or sustain competitive advantage will give a firm an inventive engage in new IT innovation adoption as IT can be considered as a specific resource and

insufficiency of current resources to achieve or sustain competitive advantage will give a firm an incentive to engage in resource replacement and acquisition and 2) the adoption decision of an IT asset will be determined by its function fit to the firm's needs and its requirement fit to the firm's current resource base because competitive advantage achieved from IT asset depend on both its function fit to the firm's needs and its requirement fit to the firm's current resource base and such competitive advantage is a meaningful determinant of the kind of new resources to be acquired or developed. That is consistent with three assessment processes for technological innovation adoption we proposed before based organizational innovation adoption research.

### 3.5 A Three-Match Based Framework for IS Innovation Adoption

Based organizational innovation theory and resource based view of the firm, we proposed a framework in which a firm's adoption decision of an IS innovation is determined by its match assessments of three elements: the firm's strategic needs, its current resource, and the specific IT solution to be adopted. Figure1 shows the relationships between these three match assessments and the firm's IS innovation adoption decision. The **match between the firm's current resources and its strategic needs** is defined as the extent to which the performance of the firm's current resources is perceived to meet its strategic needs. The **match between the IT solution and the firm's strategic needs** is defined as the extent to which the abilities of the IS innovation are perceived to be useful for the firm's strategic needs without considering the adoption and implementation constrains. And the **match between the firm's current resources and the IT solution** is defined as the extent to which the firm's current resources are perceived to be ready for the resources required for the adoption and implementation of the IS innovation. Generally to say, the perceived resource-strategic needs match determine the urgency of the company to change its current state of affairs to solve the problem faced by the company, whereas the perceived IT-strategic needs match and the IT-resource match jointly determine the extent to which a firm's problem is perceived to be solved by the performance of an innovation if it were implemented.

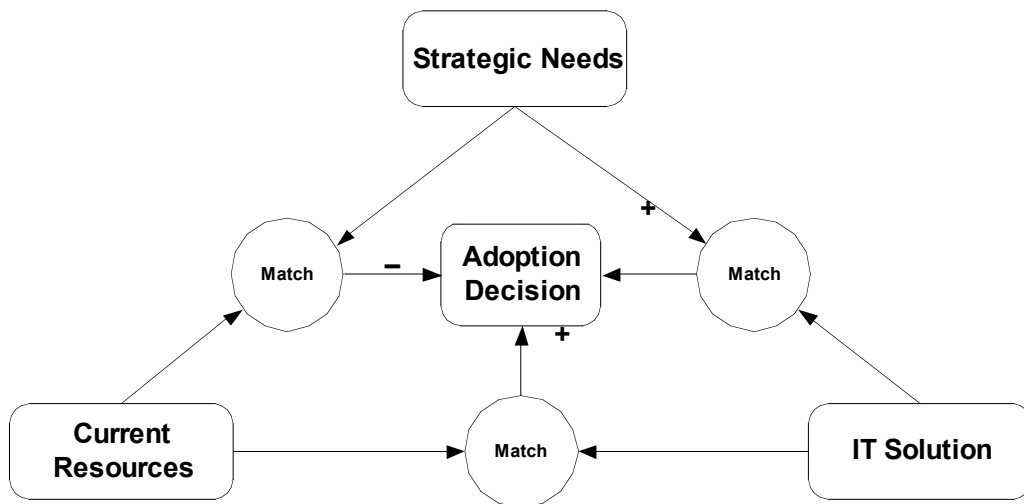


Figure1: A Three Match-Based Framework for IS Innovation Adoption

## 4 RESEARCH MODEL AND HYPOTHESES

Based on this three match-based framework, we proposed that a firm's adoption decision of e-marketplace in its international marketing practices is depended on its 1) perceived performance gap in its international marketing practices, 2) perceived potential utility from e-marketplace adoption in its

international marketing practices, and 3) perceived resource readiness for adoption and implementation.

H1: *The perceived performance gap in a firm's international marketing practices has a positive effect on the firm's adoption decisions of Internet-based B2B e-marketplace.*

H2: *The perceived potential utility from e-marketplace adoption in a firm's international marketing practices has a positive effect on the firm's adoption decisions of Internet-based B2B e-marketplace.*

H3: *The perceived resource readiness for e-marketplace adoption and implementation has a positive effect on the firm's adoption decisions of Internet-based B2B e-marketplace.*

## 5 RESEARCH METHOD

A small range case study has been done to justify our research model. Chinese companies who have export business were considered as the potential subjects of our study. Because of the difficulty of "getting into" organizations to collect data, we used a convenience sample generated from industry contacts. Six companies have been selected, including four adopters and two non-adopters. They are different in ownership, size, age, and industry. The backgrounds of these companies were summarized in Table 1.

	Company Type	Export Proportion	Employees	Export Experience	E-market Experience
C1	Manufacturer	90%	100-200	5 years	Adopter
C2	Manufacturer	5%	100-300	2 years	Adopter
C3	Trading Company	100%	1-10	3 years	Adopter
C4	Trading Company	100%	1-10	5 years	Adopter
C5	Trading Company	100%	1-10	10 years more	Non-adopter
C6	Trading Company	100%	50-100	10 years more	Non-adopter

*Table 1: Major Characteristics of Case Companies*

The data were collected via face-to-face interviews with the individuals in each company who are directly involved in the e-marketplace participation, including CEO and managers of export or sales department. Each interview lasted for about one hour. All interviews were tape-recorded and transcribed. Notes were also taken during the interviews. We are trying to interview more people in one company for the triangulation, but because of unavailability of other appropriate interviewees or no other suitable persons at that time, some companies only have one interviewee.

## 6 RESULTS AND ANALYSIS

### 6.1 Perceived Performance Gap

In our results, a firm's perceived performance gap were found to be major reasons for the firm's adoption (C2, C3, and C4) and non-adoption (C5 and C6) of Internet-based B2B e-marketplaces. In Case 2, company 2 is a manufacture of data network products. Its products mainly focused on the domestic market. Before its adoption of B2B e-marketplace as an international marketing approach, it just started international business for one year. As the company did not have much experience in international business, limited resources had been invested into the international business department when the department was established. For the manager who was in charge of international business, there were not enough resources for her to use, especially financial resources. As traditional marketing approaches were too expensive for the manger, she tried to develop an English version web site as a window for the company. But the performance of website could not satisfy the firm's needs. As mentioned by the manager: "As a window for our company, our website seems too small." Thus, the

manager tried to invest the revenues from the international business to more effective marketing approaches. That was indicated as one of major reasons for their e-marketplace adoption. Such findings show that resource insufficiency and poor performance of a firm's current marketing approaches will give the firm an incentive for new marketing approach adoption, such as Internet-based B2B e-marketplaces.

A similar conclusion also can be drawn from Case 3 and Case 4. In these cases, company 3 and company 4 were both small and newly established trading companies before their adoption of B2B e-marketplaces. As a small and newly developed company, company 3 did not have enough resources for traditional marketing approaches, including both human and financial resources. As reported by the general manager of the company3: “[At that time], we were a small company and just in the development stage. I could not frequently attend the traditional trading fairs around the world like those big companies. The costs of joining these traditional trading fairs are too high for us.” Thus, he must try other kinds of marketing approaches. Likewise, the company 4 also had a resource limitation in its international marketing approaches. Though the company had attended some kinds of traditional trading fairs, they were not enough. Therefore, that gave the firm adoption incentives for new marketing approach. For example, the manger of the company said: “[At that time], we could not attend all important exhibitions. They were too expensive and energy consuming. Thus, we tried to use any kinds of free/low cost resources as the supplement of our traditional marketing approaches.”

While findings from Case 2 to 4 show that a mismatch assessment between the performance of a firm's current resources and its expectations/needs will have a positive effect on the firm's adoption of an IS innovation, findings from Case 5 and 6 confirm such an argument from another perspective.

In Case 5, company 5 was a trading company. The major international marketing approach of this company was to attend the GuangDong International Trading Fair in China which is held two times a year. The company was satisfied with the outcome from that approach, as every year they received enough orders from the trading fair. Since the company did not lack orders from foreign customers, finding customers through the Internet was argued to be “dispensable” by the general manager. This shows that when the current marketing approaches perform up to a firm's expectations/needs, there will be low incentives for the company to adopt new marketing approaches, such as e-marketplaces.

A similar conclusion also can be draw from Case 6, in which perceived low performance gap gave the firm no incentives for e-marketplace adoption. As reported by the manager of export department: “Our company has more than 10 years international trading experience. Now the company has a lot of old customers and some of them are world famous big companies. Considering the ability of the company, doing business with these old customers is already enough for our company. New market development is not very important in our company. ....The current marketing approaches already satisfied our needs. Thus, there is no need for us to develop other marketing approaches.”

## 6.2 Perceived Potential Utility

In our results, perceived potential utility from e-marketplace adoption was also found to be major reasons for a firm's adoption (C1, C2, C3, and C4) and non-adoption (C5 and C6) of Internet-based B2B e-marketplaces. In Cases 1 to 4, all companies were aware of some potential benefits from e-marketplace adoption. In Case 1, the manager in charge of international business and e-business development believed that the publicity of the e-marketplace can help the company increase its awareness among foreign market. Thus, with the development of the Internet, leveraging Internet-based B2B e-marketplace will be an effective approach to introduce the company to potential customers. Similarly, in Case 2, the manger thought e-marketplace adoption would be a more effective way than the firm's current marketing approaches. Likewise, in Case 3, the general manager regarded the role of e-marketplace highly in International marketing practices. He thought, with the development of e-commerce in the international trading area, the cooperation with the online e-marketplaces would be a very useful approach in the international marketing practice. Though in Case 4, the manager did not give high evaluation on e-marketplace adoption, he admitted that they decided

to use some e-marketplaces because these e-marketplaces have collected customer information which is easy to search. These findings show that a match assessment between the ability of e-marketplaces and a firm's needs will have a positive effect on the firm's adoption of e-marketplaces.

In contrast, perceived low level benefits from e-marketplace adoption were posted as one of the major reasons for non-adoption in Case 5 and 6. The general manager of the company 5 thought that the real buyers for the company would like to come personally to the trading fairs in China rather than search through e-marketplaces because the handmade glass products which the company export required the customers to come and see the real products personally. Hence utility of e-marketplace participation for the company would be quite limited.

Likewise, the manager of the company 6 thought e-marketplace adoption would not be useful for the company as the company already had a very good reputation in the target market. Moreover, she thought the non-face-to-face feature of e-marketplace approach did not match their needs because the success rate in non-face-to-face contact approach was quite low whereas the company emphasized the success rate in new customer development. Also she feared that sharing their products information through e-marketplace will damage their profits because, as the company is doing well in this industry in the international market, there are many other competitive companies seeking product information of the company such as the design, styles, and figures. These findings show that a mismatch assessment between the ability of e-marketplaces and a firm's needs will have a negative effect on the firm's adoption decision of e-marketplaces.

### 6.3 Perceived Resource Readiness

In our results, perceived resource readiness were found to be major reasons for a firm's adoption (C1, C2, C3, and C4) and non-adoption (C5 and C6) of Internet-based B2B e-marketplaces either. In Cases 1 to 4, all companies indicated that financial readiness affected their adoption decision of Internet-based B2B e-marketplaces. In Case 1, the manager argued that: "Compared with other investment, the cost for e-marketplace adoption would be quite cheap." Similarly, in Case 2, the manager indicated that they adopted e-marketplace because at that time they had already accumulated some revenues from international business. Likewise, in Case 3, the general manager argued that the low cost requirement of e-marketplace adoption was a major reason for their adoption. Particularly, in Case 4, the manager of company 4 said that: "The most important reason for us to adopt e-marketplace approach was the most of the e-marketplaces at that time were free for adoption."

Besides financial readiness, the manager of company 1 also proposed that the owner's support for IT investment and his rich knowledge in the business model of B2B e-marketplaces were two major reasons for e-marketplace adoption. The owner's support shows that resource allocation for e-marketplace adoption and implementation will be less problematic from top management. From the resource-based view theory, top management support per se can be seen as a kind of resources readiness of the firm (Powell and Dent-Micallef 1997). And the manager's rich knowledge of the e-marketplace shows that his knowledge resources are ready for e-marketplace adoption and implementation.

From the non-adopter's perspective in Case 5 and 6, both company 5 and 6 indicated that lack of related human resources for e-marketplace implementation was a reason for their non-adoption. The general manager of the company 5 argued that: "I am not used to the Internet marketing approaches. And the company did not have other related people who can leverage the e-marketplaces as a marketing approach." Likewise, the manager of the company 6 said: "All people in the company were very busy. We did not have available people for the e-marketplace implementation." All these findings show that human resource readiness will affect a firm's adoption of e-marketplace approach.

## 7 DISCUSSION AND CONCLUSION

This study investigated the major reasons for e-marketplace adoption among SMEs in their international marketing practices. Empirical results suggest that key factors affecting SMEs' adoption decision of Internet-based B2B e-marketplace in their international marketing practices were 1) perceived performance gap in their international marketing practices, 2) perceived potential utility in new market development from adoption, and 3) perceived resource readiness for adoption and implementation. The perceived performance gap gives a firm incentive to try and adopt new marketing approaches, whereas the perceived potential utilities and the perceived resource readiness show how well the e-marketplace solution fit with the firm's situation. Jointly, these three factors explained a SME's adoption decision for e-marketplace initiatives.

Comparing findings from cases C2, C3, and C4 with C5 and C6, it seems that e-marketplace solution is more welcomed by newer and smaller companies or companies just entering the international business because these companies are less well known in the target market and do not have enough (or do not want to put many) resources for international marketing practices. Low publicity in the international market indicates a relatively higher need of these companies to increase their awareness in their target market, whereas limited resources for new market development confines the performance of their current marketing approaches. These may incur a higher perceived performance gap in their international marketing practices which in turn gives these firms incentives for e-marketplace adoption. Thus, market makers should focus more on these companies as they are more likely to adoption e-marketplace approach in their international marketing practices.

Comparing findings from case C1 with C5 and C6, it seems that, for those companies which traditional marketing approaches are already major approaches in their international marketing practices and perform up to their expectations/needs, perceived potential utilities and resource readiness will be much more important. When they perceive high value from e-marketplace adoption for their company, they will be more likely to try the e-marketplace solution even if there is no high pressure for them to develop a new marketing approach. One thing to be emphasized here is that the expected value is determined not only by the perceived potential utilities but also the perceived resource readiness. Thus, market makers should not only increase the ability of e-marketplaces to facilitate users in their international marketing practices but also reduce the resource requirements for e-marketplace adoption and implementation. Here, human resource requirements are as important as financial resource requirements. Therefore, it will be better for market makers to increase ease of use of the web site and provide training/consultant services to the customers to reduce expertise requirements from the participant firms.

The main limitations of the study consist in the limited geographical area where it has been conducted and the small number of companies interviewed. It might be therefore difficult to generalize from these results to whole areas of China or other regions of the world. Therefore, though our case-based investigation of the model of e-marketplace adoption has provided preliminary findings on the e-marketplace adoption among SMEs, further research is needed to complete our understanding of this subject. Large-scale, longitudinal surveys can be especially appropriate for addressing this issue, which will allow researchers to investigate these three explanatory factors in firms before their adoption of e-marketplace. We believe that our model and hypotheses can form the basis of larger scale studies to examine the validity and applicability of the model and to improve and refine it. Also they might be useful as a basis for others to derive their research models.

And from a framework level, this study proposed a new framework for IS innovation adoption. Our empirical findings showed that the application of this framework in e-marketplace adoption was successful as the framework was quite complete in considering the major determinants of the e-marketplace adoption. The results were consistent with our theoretical arguments. It demonstrates the usefulness of this three match-based framework for identifying facilitators and inhibitors of e-marketplace adoption and suggests the comprehensiveness of the framework in IS innovation adoption

research. As our empirical study only focused on the SMEs adoption decision of Internet-based B2B e-marketplace in their international marketing practices, further research is needed to test and justify the application of this framework. We suggest that the framework be applied in the context of larger organizations and other IS innovation adoption as well. Such empirical testing will allow researchers to identify necessary modifications to the framework to enlarge its generalizability in the adoption decisions of IS innovation by both small and large organizations.

## References

- Bailey, J.P. and Bakos, J.Y. (1997). An Exploratory Study of the Emerging Role of Electronic Intermediaries. *International Journal of Electronic Commerce*, 1(3), 7-20.
- Bakos, J. Y. (1991). A Strategic Analysis of Electronic Marketplace. *MIS Quarterly*, 15(4), 295-310.
- Bakos, J.Y. (1997). Reducing Buyer Search Costs – Implications For Electronic Marketplaces. *Management Science*, 43(12), 1676-1692.
- Bakos, J.Y. (1998). The Emerging Role of Electronic Marketplaces on the Internet. *Communications of the ACM*, 41(8), 35- 42.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.
- Bell, J., Crick, D., and Young, S. (2004). Small Firm Internationalization and Business Strategy. *International Small Business Journal*, 22(1), 23-56.
- Benjamin. R. I. and Levinson, E. (1993). A Framework for Managing IT-Enabled Change. *Sloan Management Review*, 23-33.
- Bennett, R. (1997). Export Marketing and the Internet. *International Marketing Review*, 14(5), 324-344.
- Bloch, N. and Catfolis, T. (2001). B2B E-Marketplaces: How to Succeed. *Business Strategy Review*, 12(3), 20-28.
- Chaffey, D., Mayer, M., Johnston, K. and Chadwick, F.E. (2000). *Internet Marketing: strategy, implementation and practice*. London: Prentice-Hall.
- Chircu, A.M. and Kauffman, R.J. (2000). Reintermediation Strategies in Business-to-Business Electronic Commerce. *International Journal of Electronic Commerce*, 4(4), 7-47.
- Choudhury, V. (1998). Uses and Consequences of Electronic Markets: An Empirical Investigation in the Aircraft Parts Industry. *MIS Quarterly*, 22(4), 471-507.
- Clemons, E. K. and Row, M. C. (1991). Information Technology at Rosenbluth Travel: Competitive Advantage in a Rapidly Growing Global Service Company. *Journal of Management Information Systems*, 8(2), 53-79.
- Cooper, R. and Zmud, R. (1990). Information Technology Implementation: A Technological Diffusion Approach. *Management Science*, 36(2), 156-172.
- Cyert, R.M. and March J.G. (1963). *A Behavioral Theory of the Firm*. New York: Prentice-Hall.
- Dai, Q. and Kauffman, R.J. (2002). Business Models for Internet-Based B2B Electronic Markets. *International Journal of Electronic Commerce*, 6(4), 41-72.
- Downs, A. (1966). *Inside Bureaucracy*. Boston: Little, Brown and Company.
- Fichman, R. G. (2000). The Diffusion and Assimilation of Information Technology Innovations. In *Framing the Domains of IT Management* (Zmud, R.W. Ed.), Cleveland, OH: Pinnaflex,.
- Graham, I., Spinardi, G., and Williams, R. (1996). Diversity in the Emergence of Electronic Commerce. *Journal of Information Technology*, 11, 161-172.
- Grant, R. M. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(1), 114-135.
- Grewal, R., Comer, J.M., and Mehta, R. (2001). An Investigation into the Antecedents of Organizational Participation in Business-to-Business Electronic Markets. *Journal of Marketing*, 65, 17-33.

- Hamill, J. and Gregory, K. (1997). The Internet and International Marketing. *International Marketing Review*, 14(5), 300-323.
- Jarvenpaa, S. L and Leidner, D. E. (1998). An Information Company in Mexico: Extending the Resource-Based View of the Firm to a Developing Country Context. *Information Systems Research*, 9(4), 342-361.
- Malone, T.W., Yates, J., and Benjamin, R.I. (1987). Electronic Markets and Electronic Hierarchies. *Communications of the ACM*, 30(6), 484-497.
- March, J. G. and Shapira, Z. (1987). Managerial Perspectives on Risk and Risk Taking. *Management Science*, 33, 1404-1418
- March, J.G. and Simon, H.A. (1958). *Organizations*. New Yoik: Wiley. Marquis, Donald G.
- McFarlan, F.W. and McKenney, J.L. (1982). *Information Systems Management: A Senior Management Perspective*. Homewood, IL: Irwin.
- Memishi, R. (2001). B2B exchanges survival guide. *Internet World*, 7(1), 48-55.
- Mohr, L.B. (1969). Determinants of Innovation in Organizations. *The American Political Science Review*, 63, 111-126.
- OECD. (2002). *Electronic commerce and SMEs, ICT and electronic commerce for SMEs: Progress Report, Working Party on Small and Medium-Sized Enterprises and Entrepreneurship*. Geneva, DSTI/IND/PME
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. Wiley, New York,.
- Poon, S. and Swatman, P.M.C. (1997). Internet-based Small Business Communication. *International Journal of Electronic Markets*, 7(2), 15-21.
- Powell, T. C. and Dent-Micallef, A. (1997). Information Technology as Competitive Advantage: The Role of Human, Business, and Technology Role Resources. *Strategic Management Journal*, 18(5), 375-405.
- Quelch, J. A. and Klein, L. R. (1996). The Internet and International Marketing. *Sloan Management Review*, 37(3), 60-75.
- Rogers, E. M. (1995). *Diffusion of Innovations*. 4<sup>th</sup> edition, New York: Free Press.
- Sarkar, M. B., Butler, B., and Steinfield, C. (1995). Intermediaries and Cybermediaries: a Continuing Role for Mediating Players in the Electronic marketplace. *Journal of Computer-Mediated Communication*, 1(3).
- Senn J.A. (1996). Capitalizing on Electronic Commerce. *Information Systems Management*, 13(3), 15-24.
- Simon, H. (1978). Rationality as Process and as Product of Thought. *American Economic Review*, 68(2), 1-16.
- Tornatzky, L.G and Fleischer, M. (1990). *The Process of Technology Innovation*. Lexington Books, Lexington, MA.
- Tumolo, M. (2001). Business-To-Business Exchanges. *Information Systems Management*, 54-62.
- Van De Van, A. H. and Rogers, E. M. (1988). Innovation and Organizations: Critical Perspectives. *Communication Research*, 15, 632-51.
- Wade, M. and Hulland, J. (2004). Review: The Resource-Based View and Information Systems Research: Review, Extension, and Suggestions for Future Research. *MIS Quarterly*, 28(1), 107-142
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5, 171-180.
- Zaltman, G., Duncan, R., and Holbek, J. (1973). *Innovations and Organizations*. New York: Wiley and Sons.
- Zmud, R. W. (1984). Design Alternatives for Organizing Information Systems Activities. *MIS Quarterly*, 8(2), 79-93.