Critical factors for SMEs' B2B e-marketplaces: A literature review

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ABSTRACT

The integration of SMEs in Malaysia into existing B2B value chains are believed to be so far behind expectations. Technologies and approaches in the field of e-commerce are not mature enough in order to allow for their broad successful commercial applications especially to SMEs. Even though there is now an interesting and growing number of studies addressing B2B e-commerce adoption within the specific context of SMEs, little research has been conducted in developing countries, especially Malaysia. Thus, this study seeks to fill this gap to help understand the factors that hinder the adoption of ICT and e-commerce by SMEs in their trading transaction, and to explore how best they can be overcome. Furthermore, the finding can be used to identify the critical factors in ensuring B2B e-marketplaces success. Hence, help to further understand the slow adoption lagging of B2B e-marketplaces based on Malaysia phenomena.

Keywords: *Electronic marketplaces (e-marketplaces), business-to-business (B2B), Small Medium Enterprise (SMEs), Critical Factors*

INTRODUCTION AND RESEARCH BACKGROUND

In this new century, Internet has become an important medium in human life. According to Internet World Stats1 (2007), there were more than 1.1 billion Internet users worldwide in January 2007. According to Kotler (2003), there are two types of Internet component which are electronic business (e-business) and electronic commerce (e-commerce). E-business describes the use of electronic means and platforms to conduct a company's business while, e-commerce is more specific than e-business, it means that in addition to providing information to visitors about the company, its history, policies, products, and job opportunities, the company or site offers to transact or facilitate the selling of products and services online (Kotler, 2003). E-business goes beyond the customers and includes electronically mediated information exchanges with suppliers, employees, and regulatory authorities as well (Rodgers, Yen & Chou, 2002). Although there are examples in the literature where the concepts of e-commerce and e-business are defined similarly, and used interchangeably (Turban & King, 2003), e-commerce is generally considered to be a subset of e-business (Chaffey, 2002; Rodgers et al., 2002; Smith & Chaffey, 2002).

E-commerce has been introduced as one of business tools (Adams, 2004). E-commerce is business or trade that can be done via electronic devices. E-commerce facilitates by providing information about products and brands, and enabling sales transactions to enhance the effectiveness of electronic markets. The dramatic changes in the development of B2B e-marketplaces during the past few years have resulted in the evolution of a number of different trading models, as well as different types of B2B e-marketplaces (Farhoomand & Lovelock, 2001). E-marketplaces appear to be the most promising forum for reshaping B2B relationships and affect all businesses in one way or another.

In this study, e-marketplaces are viewed as a cooperative distributed system that integrates participating business entities, including consumers, suppliers, and other intermediaries. This architecture enables and facilitates common economic services and commerce transactions between the buyers and sellers, such as brokering, pricing, and negotiation, as well as cross-enterprise integration and cooperation in an electronic supply chain. Evidently, the opportunity to connect businesses via e-marketplaces has generated tremendous interest in the business world in recent years, which has also led to a large number of initiatives and capital investments (Gebauer & Shaw, 2002). However, many B2B e-marketplaces operators have rushed online without sufficient knowledge of their customers' priorities, with no distinctive offerings, and without a clear idea about how to become profitable (Wise & Morrison, 2000). Consequently, many e-marketplaces have failed during the few years they have been around. Therefore, the objective of this study is to identify the critical factors which include critical success factors and critical failure factors B2B e-marketplaces. In order to identify the critical factors of B2B e-marketplaces' empirical study will be done.

B2B E-Marketplace Success and Failure

In general terms, the word success can be defined as the functionalities of something desired, planned, or attempted, while failure, simply stated, is the lack of success (Thesaurus.com, 2004).

Critical Success Factors of B2B E-marketplaces

In the context of e-business, critical success factors are defined as the things a firm must do well to flourish (Weill & Vitale, 2001), or as contributing conditions, done exceedingly well, for electronic market processes to function with more than average success (Fairchild, Ribbers, & Nooteboom, 2004). In order to identify critical success factors for B2B emarketplaces in the literature, the term used is defined by Fairchild et al. (2004), since this definition covers factors with economic impacts towards continuance of electronic markets.

Instead of discussing specific critical success factors, Bruun, Jensen & Skovgaard (2002) identify five elements that constitute the foundation (or strategic position) for e-marketplace success. By testing their theoretical framework during the rollout of one B2B e-marketplace, Bruun et al. (2002) found focus, governance, functionality, technology, and partnership as essential for e-marketplace success. Various issues must be considered with respect to each of these elements in Table 1, which must also be carefully designed and continuously modified in order to accomplish success.

Table 1: Elements of the Setup of an e-Marketplace – Foundation for Success

Element	Issues to consider
Focus	- Identifying which specific buyer and seller segments to target Focus - What type of products are available on the e-marketplace - Key players in a given industry - Geographic coverage - Horizontal vs. vertical e-marketplace
Governance	- Degree of neutrality (i.e., neutral or biased toward buyers or suppliers)
Functionality	- Commerce (i.e., trading mechanisms) Functionality - Content (i.e., commerce content and other value-added content) - Collaboration (i.e., between buyers and sellers, and with third parties) - Coordination of Commerce, Content, and Collaboration

Technology	Type of technological platform Technology - Platform's ability to support development of advanced market-making tools, integrated procurement tools, advanced collaboration tools. - Possibility of frictionless integration with the ERP* systems of participating buyers and sellers. - Scalability - Flexibility - Security
Partnership	Core competence Partnership - Acquisition of complementary skills

Source: Bruun, Jensen and Skovgaard (2002)

With respect to focus, e-marketplace operators should consider what buyer and seller segments to target, and what products to offer. A lack of clear focus could lead to a situation in which the e-marketplace tries to sell everything to everybody, but ends up selling nothing to anybody. The governance element involves deciding whether the e-marketplace should be neutral or biased towards either buyers or sellers, for example by what group it should be operated or controlled.

Functionality in the context of B2B e-marketplaces is described with respect to three core elements which are Commerce, Content, and Collaboration (or Connection) (Kearney, 2000; Bruun et al., 2002). In addition, choosing a scalable, flexible, and secure technological platform that supports the development of various tools and enables integration is crucial for the success of an e-marketplace.

Concerning partnerships, Bruun et al. (2002) emphasize that e-marketplaces, like other types of firms, should concentrate on their core competencies and outsource other, non-core, tasks to partners with complementary skills, in order to become successful. An overview of literature on e-marketplaces, including the empirical studies presented above, indicates that e-marketplaces are successful for a number of reasons. A clear majority of authors discussing the success of e-marketplaces stress the importance of achieving a critical mass of participants, and thereby creating liquidity, to become successful (Bruun et al., 2002; Dou & Chou, 2002; Fairchild et al., 2004; Kaplan & Sawhney, 2000; Tumolo, 2001; Turban et al., 2002).

Another factor that is heavily emphasized as important for e-marketplace success is domain expertise (Turban et al., 2002). This involves significant knowledge about industrial structure, business processes, industrial players, and government and policies. The ability to capture value and configure an appropriate revenue model is also considered crucial for e-marketplace success (Bruun et al., 2002; Turban et al., 2002). To be able to capture value, Bruun et al. (2002) state that e-marketplaces must, firstly, offer a compelling value proposition and, secondly, configure an appropriate revenue model. Several authors (Bruun et al., 2002; Tumolo, 2001) point out appropriate technology as a critical factor for success. For instance, Bruun et al. (2002) claim that the technological platform should support the development of advanced market-making tools, integrated procurement tools, and advanced collaboration tools. In addition, Tumolo (2001) stresses the importance of seamless integration capabilities (Bruun et al., 2002).

Concerning strategic partnership, making the right partnerships is very important for achieving success (Bruun et al., 2002; Sculley & Woods, 2001; Skinner, 2000). That is because it allows the e-marketplace to build liquidity and scale up quickly toward market domination. Chung, Ephraim, Heckmann, Laseter, Long and Oliver (2001) emphasize that e-marketplaces should also actively pursue partnering opportunities.

With respect to functionality, several authors (Bruun et al., 2002; Turban et al., 2002) argue that blending commerce, content, and community/connection (or collaboration) is crucial for success, since the right mix of these components is a requirement to achieve critical mass. Furthermore, complementing process automation with deep content is stated to be a key to success (Dou & Shou, 2002).

Targeting the right industries is another factor suggested as critical for the success of e-marketplaces (Dou & Chou, 2002; Skinner, 2000; Turban et al., 2002). An overview of success factors discussed in the literature is presented in Table 2.

Table 2: Summary of Critical Success Factors

Critical Success Factors
Critical mass/Liquidity (achieving a critical mass of participants, and thereby creating liquidity)
Understanding of stakeholder motives to be able to clearly communicate the value created through e-marketplace
Dominance – first mover
Right owners (in house system or out sourcing)
Ability to exploit economies of scope
Trust (among partners, suppliers, buyers, privacy issues)
Domain expertise (significant knowledge about industry structure, business processes, industry players, and government and policies)
Ability to capture value through an appropriate revenue model
Appropriate technology (new technology)
Strategic partnerships (right partnerships)
Functionality: Blend content, community (or collaboration), and commerce
Focus: targeting the right industries; targeting inefficient (industry) processes; focus on non-complex products with low asset specificity
Governance: Maintaining commercial neutrality
Learning cost/Adoption
Openness (capability to adapt to new trend)
A full range of services/Complete solutions
Catalogue content management
Brand building and brand strength
Management of channel conflict
Transparency and integrity
Flexibility
Ease of use
Interoperability
Standard setting
Customization
Creation of value for both suppliers and buyers
Ownership of customer relationship and customer data

Critical Failure Factors

Ganesh & Madanmohan (2004) suggest various factors as critical for the failure of e-marketplaces. However, none of these authors defines the concept of critical failure factors. Literature in the broader area of e-commerce, however, suggests that critical failure factors could be analyzed through inverted critical success factors (Han & Noh, 2000). The reasons why several e-marketplaces have failed, and why many more are predicted to fail, vary (Turban et al., 2002). Several authors state that many e-marketplaces have failed because they have not succeeded in gaining critical mass and maintaining liquidity (Chen, 2003). Ganesh and Madanmohan (2004) identify a number of reasons why e-marketplaces failed to attract suppliers and buyers, and therefore did not achieve critical mass and necessary liquidity:

- Supplier enablement and participation (i.e., suppliers hesitate to join e-marketplaces due to complex procedures and high upfront costs)
- Path dependency (i.e., companies hesitate to break away from existing networks of relationships)
- Asset specificity (i.e., companies do not want to give up investments that have already been made in building a network of contracts)
- Partnerships and relationships (i.e., companies are not culturally prepared to make changes to compete based solely on price within an open marketplace)
- Privacy issues (i.e., suppliers are concerned about competitors possibly getting hold of their price lists)
- Technology adoption (i.e., suppliers are reluctant to adopt new technology)
- Price competition and commoditization (i.e., suppliers are reluctant to compete solely on price and are concerned about their products/services being commoditized due to competition based solely on price)

METHODOLOGY

The purpose of this study is to identify the critical factors of B2B e-marketplace. The research approach components are as shown in Figure 1.

Research Questions	What are the critical factors in ensuring B2B e-marketplaces success?
Research Objectives	To identify the critical factors in ensuring B2B e-marketplaces success
Research Approaches	Empirical Study LITERATURE REVIEW
Research Activities	- Identify the critical factors of B2B e-marketplaces - Develop interview guide related to critical factors of B2B e-marketplaces

Figure 1: Phases of Research

Theoritical Study

According to Marshall and Rossman (1999), the main role of the literature review is that it shows the underlying assumptions behind the research questions, demonstrates the researcher's knowledge within the area, shows that the proposed study will fill a gap in previous research, and refines and redefines the research questions by embedding them in larger empirical traditions. The literature review that was performed in this study is based upon literature related to B2B e-marketplaces. Subsequently, relevant articles were acquired, reference lists were inspected, and additional relevant articles were acquired. A thorough review of literature review yielded descriptions of past studies in the area of B2B e-marketplaces among SMEs, general view of the findings and also aspects that require further probing.

Measures to Capture the Critical Factors

The research question focuses on factors critical for the success and/or failure of B2B e-marketplaces. Consequently, this question necessitates conceptualization of the terms "success" and "failure," as well as "critical success factors" and "critical failure factors." Broadly, the word "success" can be defined as the achievement of something desired, planned, or attempted (Thesaurus.com, 2004). When discussing business performance, success is often associated with profitability. Similar to the views presented by Bruun et al. (2002), our point of departure is that e-marketplaces are independent entities and, therefore, are successful if they are profitable. The measures used in this study to capture success and failure of B2B e-marketplaces are presented in Table 3.1. With respect to factors critical for the success of B2B e-marketplaces, in this study, the definition of critical success factors that been used is offered by Fairchild et al. (2004), as their definition comprises factors with "economic impacts towards continuance of electronic markets." The aim is to identify major factors that are important for the success of B2B e-marketplaces. The conceptualization and the measures used in this study to capture critical success and failure factors are presented in Table 3.

Table 3: Measures to Capture the Critical Factors

Dimension	Concept	Conceptual Definition	Measure
Critical Factors	**Critical success factor**	Contributing conditions, done exceedingly well, for electronic market processes to function with more than average success. Based on Fairchild et al. (2004)	An assessment of major factors that B2B e-marketplace representative perceive as critical to the success of B2B e-marketplaces
	Critical failure factor	Conditions that, if present in an organization, cause electronic market processes to function with less than average success.	An assessment of major factors that B2B e-marketplace representative perceive as critical to the failure of B2B e-marketplaces

FINDINGS AND DISCUSSION

Critical factors consist of two kinds of factors which are critical success factors and critical failure factors. Critical factors are very important in ensuring B2B e-marketplaces success. The literature related to critical success and critical failure factors discusses a variety of issues crucial for the outcome of e-marketplace operation. An overview of success factors discussed in the literature is presented in Table 4.

Table 4: Summary of Critical Success Factors

Critical Success Factors
Critical mass/Liquidity (achieving a critical mass of participants, and thereby creating liquidity)
Understanding of stakeholder motives to be able to clearly communicate the value created through e-marketplace
Dominance – first mover
Right owners (in house system or out sourcing)
Ability to exploit economies of scope
Trust (among partners, suppliers, buyers, privacy issues)
Domain expertise (significant knowledge about industry structure, business processes, industry players, and government and policies)
Ability to capture value through an appropriate revenue model
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Functionality: Blend content, community (or collaboration), and commerce
Focus: targeting the right industries; targeting inefficient (industry) processes; focus on non-complex products with low asset specificity
Governance: Maintaining commercial neutrality
Learning cost/Adoption
Openness (capability to adapt to new trend)
A full range of services/Complete solutions
Catalogue content management
Brand building and brand strength
Management of channel conflict
Transparency and integrity
Flexibility
Ease of use
Interoperability
Standard setting
Customization
Creation of value for both suppliers and buyers
Ownership of customer relationship and customer data

Table 5 shows list of summarized critical failure factors as discussed above.

Table 5: Summary of Critical Failure Factors

Critical Failure Factors
Insufficient financial resources
Unable to achieve critical mass and maintain liquidity
Supplier enablement and participation (i.e., suppliers hesitate to join e-marketplaces due to complex procedures and high upfront costs)
Path dependency (i.e., companies hesitate to break away from existing networks of relationships)
Asset specificity (i.e., companies do not want to give up investments that have already been made in building a network of contracts)
Partnerships and relationships (i.e., companies are not culturally prepared to make changes to compete based solely on price within an open marketplace)
Privacy issues (i.e., suppliers are concerned about competitors possibly getting hold of their price lists)
Technology adoption (i.e., suppliers are reluctant to adopt new technology)
Antitrust issues
Incomplete service offerings
Management's lack of right entrepreneurial mindset

CONCLUSION

Critical factors consist of two kinds of factors which are critical success factors and critical failure factors. Critical factors are very important in ensuring B2B e-marketplaces success. Number of researchers outlined the importance of getting a critical mass of buyers and suppliers to join the e-marketplace (e.g., Bruun et al., 2002; Tumolo, 2001; Turban et al., 2002). Critical mass is considered as a context-related success factor beyond the control of e-marketplace provider (Fairchild et al., 2004). Several authors suggest that having the appropriate technology is crucial for the success of e-marketplaces (Bruun et al., 2002). Other than that, Bruun et al. (2002) consider focus and functionality to be critical success factors.

Critical factors found in literature review shows that particularly three of these factors which are liquidity, domain expertise and technological expertise are fundamental for e-marketplace success. In B2B e-marketplaces, liquidity is achieved by having a critical mass of buyers and suppliers that are not only connected to the e-marketplace, but, also utilize its services and solutions. Lacking a critical mass of buyers and suppliers that trade through the e-marketplace, will undoubtedly move the e-marketplace fast towards bankruptcy, thus, creating liquidity by achieving critical mass is a major challenge to many e-marketplace managers. Domain expertise consists of the capabilities and knowledge about, for example, industry structure, business processes and industry players. B2B e-marketplaces that have such knowledge will logically have a competitive advantage over competitors that do not. Bearing in mind the notion that B2B e-marketplace will have to face competition not only from other B2B e-marketplaces in the future.

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