

How buyers' expected benefits, perceived risks, and e-business readiness influence their e-marketplace usage

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Abstract

The main objective of this study was to investigate how buyers' usage of electronic marketplaces was influenced by their perceived risks and expected benefits associated with such markets. A large scale survey involving 359 professional buyers was performed. Results indicated that buyers' perceived risks and expected benefits had an influence on their usage extent of electronic marketplaces. In addition, buyers' e-business readiness moderated the relationship between expected benefits and usage of electronic marketplaces. Managerial and theoretical implications of these results are discussed.

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1. Introduction

In the late 1990s and early 2000 electronic marketplaces (EMs) were foreseen as intermediaries that would revolutionize how organizations do business. Optimistic figures forecasted that over half of future business-to-business trading volume would involve EM (Forrester Research, 2000). EM creations grew very rapidly in these years. By mid-2000, there were 1900 public EMs (Deloitte Research, 2001). Since their creation only a limited number of EMs had sufficient trading volume to sustain their activities. About 400 have closed and further consolidation is expected (mySupplyChain, 2001; Le, 2002). These facts clearly indicate that in many industries too many EMs were present and

that many buyers and sellers did not jump on the EM bandwagon (Day, Fein, & Ruppertsberger, 2003). On the one hand, it has been suggested that many suppliers do not use EMs because they perceive that the potential benefits do not overcome negative issues such as the ease of price comparison across suppliers and concerns about security and confidentiality (Day et al., 2003; Granot & Sošić, 2005). On the other hand, many buyers also do not use EMs because the potential disadvantages outweigh the potential benefits. Among the reasons proposed to explain why buyers do not use EMs are their reluctance to disrupt their current way of doing business, the strategic importance or the complexity of their purchasing, and also security and confidentiality concerns (Day et al., 2003; Skjøtt-Larsen, Kotzab, & Grieger, 2003). A recent survey conducted by the Institute of Supply Management (ISM) stated that in the first quarter of 2003, 88% of buyers bought indirect materials online and 75% bought direct materials online (ISM, 2003). However, only 33% used EMs to conduct their transactions (ISM, 2003). Similarly, a survey conducted by Line56 (2002) found that 39% of buyers that they would participate in EMs in the next 12 months.

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Despite the many advantages of EMs over traditional markets (Lucking-Reiley & Spulber, 2001), most buyers are still reluctant to use them when conducting online transactions. Thus, identifying determinants of EM usage is crucial in order to understand why buyers do not use EMs in greater numbers. The present study investigates two main constructs that should help explain buyers' usage extent of EMs, namely expected benefits from EMs, and perceived risks of EMs. Furthermore, this study examines the moderating role of e-business readiness in these relationships.

2. Background literature and hypotheses

2.1. Electronic markets

Unlike the traditional market in which the meeting place is a physical location, an EM refers to a virtual space on an electronic network (Malone, Yates, & Benjamin, 1987), an interorganizational information system that allows the participating buyers and sellers to exchange information about prices and product offerings (Bakos, 1991; Brandtweiner & Scharl, 1999), "an e-application" (Hoque, 2000), or an internet-based e-commerce platform (Brooks & Cantrell, 2000) that matches multiple buyers and suppliers in transactions. EMs provide an electronic method to facilitate transactions between buyers and sellers that potentially provide support for all of the steps in the entire order fulfillment process. However, Skjøtt-Larsen et al. (2003) suggest that most EMs do not support all transaction phases (i.e., information, negotiation, settlement, and after sales).

2.2. Expected benefits

When exchanging products and services, buyers and sellers face many costs associated with pre-transaction discoveries (in the form of time, effort, and money) such as identifying prospective trading partners, ascertaining product features and availability, and gathering quality and price information. These costs are also known as search costs (Strader & Shaw, 1997, 1999). In fragmented markets, the search is complex and costly, leading to information asymmetry and resulting in limited product choice and non-optimal prices for buyers. EMs reduce search costs in several ways: providing information on sellers and their product availability and prices, thus facilitating comparison (Bakos, 1991, 1997, 1998; Berthon et al., 2003; Evans & Wurster, 1999), expanding the supplier base, hence buyers' options (Mahadevan, 2000), allowing buyers to optimize their selection within the constraints of service availability through near-perfect market information, and providing real-time inventory listing (Gudmundsson & Walczuck, 1999). In addition, with low asset specificity and low coordination costs, EMs are suggested to enable lower transaction costs for buyers (Berthon et al., 2003; Bichler, 2001; Daniel & Klimis, 1999; Domowitz, 2002; Malone et al., 1987). This is the major factor making EMs preferable to electronic hierarchies (Malone et al., 1987). By joining an EM, buyers are able to reduce communication costs, significantly reduce paper work, thereby reducing transaction costs. Overall,

using information technology and Internet technology, EMs have been shown to be able to reduce search costs, facilitate transactions, offer trust to prevent opportunistic behavior and "maverick" purchase, and broaden the supply and demand base so that buyers have more choices and suppliers have access to more buyers (Bailey & Bakos, 1997). Hence, economic theory suggests that the main benefit of EMs is market efficiency through market aggregation (Bakos, 1991, 1997, 1998; Malone et al., 1987). Market aggregation refers to usefulness of EM in overcoming market fragmentation, thus offering buyers more choices, more readily available information about product and suppliers, transparent prices, and lower transaction costs.

More recently EMs have also been suggested to have another type of benefit: inter-firm collaboration (Bloch & Catfolis, 2001; Brunn, Jensen, & Skovgaard, 2002; Eng, 2004; Le, 2002). It can be defined as the extent to which all activities within an organization, and the activities of its suppliers, customers, and other supply chain members, are integrated together (Stock, Greis, & Kasarda, 1998; Narasimhan & Jayaram, 1998; Wood, 1997). Bloch and Catfolis (2001) suggest that EMs facilitate inter-firm collaboration by automating transactions and increasing process transparency. For buyers, EMs improve the procurement process by making it Web-based (Barratt & Rosdahl, 2002). It involves electronic documents routing through order request, approval and replacement of costly manual processing (Subramaniam & Shaw, 2002). Properly constructed to support specific access hierarchies, information filtering criteria, business rule and workflow, EMs help buyers effectively manage their transactions, track their market activities, prevent unauthorized activities, and protect confidential information (Le, 2002). Beside automation, inter-firm collaboration is the driving force of effective supply chain with open and low-cost connectivity, very large, flexible, and multimedia data storage capabilities, systems and channel integration, and higher-level self service capabilities (Horvath, 2001). In addition, it is suggested that EMs create the most benefit when buyer-supplier relationships are well established and the supply chain is multi-tiered and complex (Bloch & Catfolis, 2001; Brunn et al., 2002; Dai & Kauffman, 2002; Le, 2002). As suggested by Morgan and Hunt (1994), trust and relationship commitment in established business relationships lead, among other things, to more cooperation and less uncertainty among partners. These outcomes may increase benefits associated with inter-firm collaboration (e.g., inventory management) and also decrease perceived risks (e.g., dealing with unknown suppliers) associated with joining EMs. By providing participants with collaborative tools such as demand forecasting, inventory management and production planning, EMs help provide increased visibility across several tiers of supply chain. Finally, EMs also provide value to buyers through collaborative commerce, i.e., the use of an online business-to-business exchange to facilitate the flow of business processes in addition to transactions (Raisch, 2001).

Whereas market aggregation creates value for sellers and buyers by overcoming market inefficiencies associated with market fragmentation, inter-firm collaboration seeks improvements in business processes throughout the supply chain. Thus, it is suggested that buyers may expect two different types of

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