

Business-to-business collaboration through electronic marketplaces: An exploratory study[☆]

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Abstract

Many business-to-business electronic marketplaces (EMs) are now offering collaboration functionalities, but the collaboration concept in an EM context has not been studied systematically. This paper is a preliminary effort to explore and categorise the different types of collaboration functionalities that may be offered by EMs. By surveying websites, we identified five types of horizontal collaboration (buying groups) and four kinds of vertical supply chain collaboration in EMs. Our findings suggest that supply chain collaboration tends to be supported more than buying groups by existing EMs, and a high percentage of EMs now offers supply chain coordination and integration. Among online buying groups, the exchange-catalogue model is the most popular, possibly since it puts fewer burdens on members and coordinators.

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1. Introduction

Internet-based business-to-business electronic marketplaces (EMs) are “*open electronic platforms facilitating activities related to transactions and interactions between multiple companies*” (Holzmüller and Schluchter, 2002). EMs have evolved from pure competitive markets that support buyer/seller aggregation, to supporting transactions, and finally to support integration and collaboration among firms with existing business relationships (Ganesh, 2004). Nowadays, most EMs support a portfolio of relationships to cater to different purchasing strategies (Grieger and Kotzab, 2002; Skjot-Larsen et al., 2003; Bartezzaghi and Ronchi, 2004; Eng, 2004; Wang and Archer, 2005). For some EMs, supporting aggregation has become a necessity, while supporting collaboration and

integration is their main source of revenue and competitive advantage.

Although there is a vast literature from different disciplines on inter-institutional collaboration, collaboration in the EM context has not been studied systematically. The purpose of this paper is to explore such collaboration, at different levels. In its broadest sense, joining an EM is called “collaborative commerce”, regardless of whether business participants trade through arms-length market relationships or through long-term relationships (Barratt and Rosdahl, 2002). In this sense, all EMs are collaborative initiatives. Some EMs have been collaborative initiatives by big industry players, such as Quadrem in the mining industry. These collaborations have been limited to sharing an EM infrastructure, but not purchasing and sales. We will explore how firms can collaborate in purchasing through EMs; otherwise our conclusion would be that all EMs are collaborative initiatives. This conclusion is obvious and offers few implications. Our exploration has the objective of addressing the specific research question of enumerating the existing forms of buyer/seller purchasing collaboration through EMs, and constructing a categorisation framework that reflects these forms of collaboration.

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The paper is organised as follows. First, a literature review includes the concept of EMs, collaboration, and EM collaboration. Second, different forms of EM collaboration offerings are identified, based on a survey of 134 EM websites. The forms of collaboration identified will answer our research question. Third, we compare and explain our classifications in relation to the previous literature, and finally we outline the potential for future research on this topic.

2. Literature review

Collaboration in purchasing can occur either vertically among buyers, or horizontally between buyers and sellers. Huber et al. (2004) categorised online collaboration into horizontal (pooled purchasing) and vertical (buyer–seller cooperation) collaboration. Following this line, we reviewed the literature on both vertical and horizontal collaboration in purchasing. The literature highlights the importance of supporting collaboration among buyers and sellers through EMs, but the types of collaboration have not been studied systematically.

2.1. An introduction to electronic marketplaces

The most popular classification of EMs divides them into public, consortia-based, and private EMs (Grieger et al., 2003). Public EMs are owned by a third party, serving multiple buyers and sellers. Consortia-based EMs are those that have been established by several big industry players. For example, *Covisint*,¹ is an EM that was built originally for the automotive industry by the big three American auto manufacturers (Ford, GM, and Daimler Chrysler). Private EMs are established by single companies mainly to support their own purchasing and selling activities. According to the number of participants on both sides, the above EMs may also be termed many-to-many, many-to-few and many-to-one EMs, respectively (Paviou and El Sawy, 2002). In this paper, we exclude private EMs and one-to-many EMs, and focus on public and consortia-based EMs and many (or few)-to-many EMs.

Both academics and practitioners have studied how EMs can attract enough customers to be viable, and the final conclusion seems to be that supporting collaboration in EMs is appealing to both buyers and sellers. Based on innovation diffusion theory, Joo and Kim (2004) and Hadaya (2004) found that external pressure from trading partners plays an important role in adoption of EMs, but that perceived benefits appear not to have significant effects on adoption. Although external pressure exerted by buyers on suppliers may encourage adoption of EMs, it may also result in distrust that could dampen actual EM use. Lee and Clark (1997) found that the implementation of

electronic markets results in higher perception of risks due to higher uncertainties; e.g. buyers face the risks of incomplete and distorted information, whereas sellers face the possibility that their price offers will be undercut due to information transparency. This result was also verified by Lee (1997) who studied a used car EM. Supplier distrust and perceived buyer opportunism sometimes cause supplier dissatisfaction and resistance to the adoption of such EMs (Gulledge, 2002). This highlights the importance of offering collaboration functions through EMs, since this can result in a win–win strategy, where opportunism and price cutting have been eliminated.

2.2. Vertical collaboration and strategic purchasing

Collaboration is an effort by two or more organisations to achieve results that they cannot achieve by working in isolation. Collaboration has been widely discussed in a variety of disciplines, such as in transaction cost economics (TCE) (Williamson, 1975), relationship marketing (Håkansson, 1982; Jap, 2001), inter-organisational systems (Kuman and Dissel, 1996; Alstynne, 1997), strategic management (Gulati et al., 2000), supply chain management (Cousins, 2002), and sociology (Winer and Ray, 1994). Collaboration and its equivalent terms such as networks and long-term relationships are “everywhere—I read about them everywhere—they are really fashionable” (Harrison, 2005). The benefits of developing long-term relationships can include reductions in transaction costs, and increases in resource sharing, learning, and sharing knowledge. Particularly, relevant to the purchasing functionalities offered by EMs is research in TCE and the supply chain management literature.

Based on human rationality assumptions, early TCE research provided insights on the choice between two governance structures: markets and hierarchies (Williamson, 1975). The contingent model of TCE suggested that high transaction uncertainty, transaction-specific investment, and transaction frequency would result in high transaction cost if products were procured through the market, thus encouraging the adoption of hierarchical relationships. It was recognised later that markets and hierarchies were not the only possible governance structure. Many intermediate forms of governance were found to be more likely, and given names such as network organisations (Powell, 1990; Alstynne, 1997), relational governance, and strategic alliances (Gulati and Maria, 2000). Trust, collaboration, and resource interdependency are important characteristics of these intermediate governance structures. Supply chain management is an integrative approach for dealing with the planning and control of materials flowing from suppliers to end users (Croom et al., 2000). Tan (2001) identified two perspectives of supply chains: a purchasing and supply perspective, and a transportation and logistics perspective. The objective of the first perspective is to reduce the supply base and inventory, and to increase customer satisfaction. The

¹The web addresses of all the EMs mentioned in the paper can be found in the appendix. Covisint was sold to Compuware in early 2005, and is no longer owned by the big three automotive manufacturers.

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