Electronic Supply Chain Partnerships: Reconsidering Relationship Attributes in Customer-Supplier Dyads

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ABSTRACT

This study is focused on discovering important trading partner selection criteria that are relevant in electronic data interchange (EDI)-enabled relationships. Increasing implementation of integrated supply chain management (SCM) and collaborative commerce initiatives call for the cultivation and maintenance of long-term strategic partnerships such as those engendered by EDI. There is a body of evidence showing that hub firms (i.e., firms that initiate technology-enabled partnership networks) are, in fact, getting more selective about their trading partners. However, there is a need to understand specific trading partner attributes that are more likely to ensure successful long-term relationships. Using the survey technique, this study elicited respondents from customer and supplier firms engaged in EDI applications; the final respondent sample ended up with a pool of firms primarily in the manufacturing sector. Factor analysis uncovered six trading partner selection factors which both customer and supplier firms thought were critical in selecting partners: strategic commitment of top management; readiness for high-level EDI; joint partnering; trading partner flexibility; communications; and EDI infrastructure.

Keywords: electronic data interchange (EDI), interorganizational systems (IOS), trading partners, supply chains

INTRODUCTION

There is a need to understand electronic trading partnerships anew as firms move increasingly towards internetworked environments powered by a variety of Internet-enabled technologies. This study, though, looks at the key technology that started the movement towards linked enterprises—electronic data interchange (EDI) or a set of specifications for exchanging standard business documents such as purchase orders, invoices, bills of lading, etc., over computer networks. While the concept of using EDI to link firms is not new, the focus of the inquiry on what makes electronic trading partnerships work is fairly new. Important developments in the marketplace make such an investigation especially timely: the competition between and among supply chains has now superseded competition among firms. The game is no longer as simple as it used to be.

The objective of this article is to show the results of a study that looked into perceptions of customer and supplier firms of organizational attributes they consider critical in selecting trading partners for an EDI-enabled relationship. Following factor analysis, both customer and supplier firms indicated the importance of six trading partner selection factors: strategic commitment of top management; readiness for high-level EDI; joint partnering; trading partner flexibility; communications; and EDI infrastructure. Customer firms turned out to be more demanding of these attributes than were the supplier firms. Furthermore, through correlation analysis, these factors are broken down into specific items and are discussed in considerable detail in relation with a number of EDI system success measures: customer service quality, user satisfaction with EDI network information, and overall rating of EDI network success. Finally, using T-tests, the effect of the network initiator status of a firm on the importance of these perceptions of trading partner selection attributes is also taken into consideration. Customer firms appear to be satisfied with the EDI networks they participated in, whether or not they actually initiated the networks. Supplier firms, on the other hand, were satisfied only if they were the EDI network initiator. Managers involved in EDI implementations will find great value in taking these findings into consideration as they plan ahead for their strategic partnerships. Customer firms appear to historically spearhead EDI networks and seem to readily assume the "hub" or "initiator role." Supplier firms would be advised to reconsider this study's findings in order to increase their chances of being selected by customer hub firms into what might turn out to be highly sought after but difficult to enter electronic networks.

EDI Will Still Be Around

Some industry pundits have been pessimistic about the future prospects of EDI, but research firms tracking its corporate use are finding that it is more entrenched than ever. Gartner Group's tally is that there are about 200,000 firms worldwide using EDI in conjunction with their e-business initiative (Payne and Simmons, 2000) and that EDI transactions will grow to about $3.8 billion by 2002 (Wilson, 2000). There appears to be continued use of EDI in the marketplace for various initiatives like vendor-managed inventory or quick response in the retailing, efficient consumer response in the grocery industry, total quality management, just-in-time delivery, and supply chain management across industries at different levels of intensity (Vlosky and Westbrook, 2002; Young, 2002; Pathak, 2001; Maingot and Quon, 2001; Javalgi and Reisenwitz, 2001; Mentzer, DeWitt, Keebler, and Min, 2001; Brown and Bukovinsky, 2001; Ahmad and Schroeder, 2001; Chaouch, 2001). EDI is still relied upon for maintaining traditional hierarchical trading partner relationships as opposed to horizontal market partnerships (Rasheed and Geiger, 2001; Grewal, Comer, and Mehta, 2001). Two important B2B commerce implementations involve extranets and private exchanges, and both still heavily employ EDI. An extranet has also been defined as a collaborative network linking businesses with their suppliers, customers, or other strategic partners that share common goals using Internet-enabled technologies. An extranet has also been considered an extension of a company's intranet to which collaborating companies, usually customers or suppliers, have access (Riggins and Rhee, 1999). In a survey conducted by *InformationWeek*, it was found

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