Relationships Between Supply Characteristics and Buyer-Supplier Coupling in E-Procurement: An Empirical Analysis

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ABSTRACT

This study explores the resource dependency and relational exchange theories of understanding firms’ participation in e-procurement, and seeks to determine the degree to which the resource dependency theory variables — supply importance, supply complexity, supply market dynamism, and availability of alternatives — affect information exchange and operational linkages, the relational exchange theory variables. Data was gathered from the Institute for Supply Management and the Council of Logistics Management members using the survey technique. Supply importance and supply complexity primarily predict information exchange and operational linkages. Study findings reconfirm the important impact of environmental and market uncertainty on firm responses, as echoed in past studies.

Keywords: B2B e-commerce; e-business; e-commerce; e-procurement; interorganizational information systems; partnerships; supply chain management

INTRODUCTION

Procurement typically accounts for the largest expense item in a firm’s cost structure (Computer Sciences Corporation, 2002). Reducing procurement costs, therefore, has always been a high priority for all organizations. Many firms have turned to e-procurement — using the Internet and Web technologies to facilitate buyer-seller transactions. A well-designed e-procurement system provides benefits that go beyond cost savings. In a study of the experiences of North American and European firms and evaluations of 40 e-sourcing solution providers, the Aberdeen Group (2002) found that successful e-procurement adopters negotiated an average of a 14.3% reduction in goods and services costs, cut sourcing cycles in half, reduced sourcing administrative costs by 60%, and shortened time-to-market cycles by 10-15%.

Cost reduction is obviously an important factor in favor of buyer-supplier cou-
pling vis-à-vis e-procurement. However, several business trends are creating a momentum toward the adoption of more efficient forms of procurement initiatives such as e-procurement. First, businesses are increasingly outsourcing not only manufacturing, but also other business processes as well. In a study of 162 manufacturing and service firms around the world, A.T. Kearney (2000) found that 52% of the firms planned to entrust most, if not all, of their engineering and design work to suppliers, while 40% planned to outsource manufacturing. Firms are continuing to shift away from highly vertically integrated models of production toward virtual partnering with suppliers and outside contracted manufacturers (Alaniz & Shuffield, 2001). The transition to leaner operating models has resulted in suppliers or contracted manufacturers providing most of the value of original equipment manufacturers’ (OEM) products. Second, many manufacturers may mandate the use of electronic procurement by its customers, as studies have shown that manufacturers’ savings accrue in proportion to the number of customers joining the e-procurement system (Raghunathan, 1999). Also, large customer firms are more likely to require the use of some means of electronic procurement among its suppliers, especially if these large firms intend to maintain relationships with just a few highly selected suppliers (Min & Galle, 1999). Given these trends, it behooves procurement professionals of any size firm to understand how procurement operates under different electronic environments into which one might find one’s firm inextricably and inevitably drawn. Moreover, they need to anticipate the very likely possibility of and plan ahead for participating in any one of these electronic procurement environments, whether or not it is instigated by their own proactive choice.

The resource dependency theory (Pfeffer & Salancik, 1978; Ulrich & Barney, 1984) purports that organizations view the environment as the source of valued resources they need to survive in the marketplace. Therefore, firms must enter into relationships with other firms that can supply them with the materials and services they need (Turner, LeMay, Hartley, & Wood, 2000). A key part of this relationship entails connecting electronically with valued suppliers. Major factors that further affect the buyer-seller relationships include supply characteristics such as its importance to buyer, supply complexity, market dynamism, and availability of alternative supplies (Cannon & Perreault, 1999). These are the four resource-dependency variables used in this study. In many cases, these characteristics exacerbate a firm’s dependence on the supplier and lead it toward new behaviors. What ensues, then, is the introduction of cooperative or collaborative organizational behavior rather than just transaction-based contacts. Heide (1994) elaborates these ideas further by extending them with the suggestion that firms reduce uncertainty by creating formal or semiformal relationships with other firms.

The relational exchange theory refers to the process of forming relationships among marketing channel members characterized by the following attributes: bilateral information exchange, role integrity, mutuality, solidarity, flexibility, harmonious conflict resolution, and a long-term orientation (Dwyer, Schurr, & Oh, 1987; Ganesan, 1994; Kaufmann & Dant, 1992; Kaufmann & Stern, 1988; Macneil, 1980). With increasing exposure to strategic business alliance partners, participating members (or firms) are protected by shared norms and values that seek to minimize, if not completely eliminate, opportunistic behaviors. Role integrity, in particular, encour-
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