Market Value Impacts of Information Technology Enabled Supply Chain Management Initiatives

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ABSTRACT

This study investigates the market value impacts of IT-enabled supply chain systems using event study method. The authors examine abnormal stock returns to investments in IT-enabled SCM systems announced by 346 firms from 2001 to 2004, and find significant, positive abnormal returns for two, three, and five day periods surrounding the event date. Further, the authors employ organizational integration perspective to test if market value impacts differ based on the functional scope, physical scope and the industry context of the SCM systems adopted by the firms. Using a multiple regression analysis, the authors find the abnormal returns to be greater for firms investing in SCM systems with greater functional scope and physical scope. The authors find marginal evidence for the effect of industry context and no impact of firm size on the market value generated from investments in SCM systems.

Keywords: Event Study, Information Technology, Market Value, Organizational Integration, Shareholder Wealth, Supply Chain Management

INTRODUCTION

Despite increased adoption and prevalence of information technology enabled supply chain systems (SCM systems), assessing the business value of these systems has been challenging, leading to questions about the very efficacy of investments in SCM systems (Heinrich & Simchi-Levi, 2005). Recent studies (e.g. Sriram & Krishnan, 2003; Ranganathan & Brown, 2006; Mitra & Singhal, 2008) have sought to capture business value impacts using market-
based measures. Although extant studies have reported shareholder wealth creation from IT investments in general, calls have been made to explore the market value generated by specific types of IT investments such as SCM systems (Ranganathan & Brown, 2006; Hendricks et al., 2007). Therefore, the overall objective of this study is to extend our current knowledge about market value impacts of investments in SCM systems. Specifically, our first research question is: do investments in SCM software create value for shareholders of firms making these investments? Researchers have also argued that mere investments in SCM systems may not produce business value (e.g. Subramani, 2004). Instead, managers have been advised to focus on specific conditions and complementary capabilities that would help firms realize value from their investments. Hence, the second issue that we examine focuses on the conditions under which investments in SCM systems create value for shareholders. Specifically, do factors such as the scope of SCM IT projects and the industry context influence the market value generated through SCM software investments?

In this paper, we use the term “SCM systems” to refer to software pertaining to SCM, including procurement, warehousing, fulfillment, logistics, and inventory management. We examine if announcements of organizational investments in SCM software result in changes to the market value of firms.

PRIOR STUDIES ON SCM SYSTEMS AND FIRM PERFORMANCE

Our research directly builds on two groups of prior studies. Table 1 summarizes key studies that use objective data for assessing SCM systems and firm performance. These studies provide preliminary support for positive business returns from investments in SCM systems. However, the results on the stock market returns have been mixed, and many of these studies largely examined firms making SCM investments in the pre-Y2K period when SCM software market was relatively immature.

Table 2 presents a set of event studies that indicate that IT infrastructure investments (Chatterjee et al., 2002), innovative application investments (Dos Santos et al., 1993), transformational IT investments (Dehning et al., 2003) and investments in ERP systems (Ranganathan & Brown, 2006) result in increased market valuations. They also point to important contextual factors that impact the market value changes associated with IT investments (Benco & Prather, 2008; Oh, Kim, & Richardson, 2006).

THEORETICAL BACKGROUND AND HYPOTHESES

We build upon the theoretical perspective of organizational integration (Barki & Pinsonneault, 2005) to understand the market value generated from SCM systems. Organizational integration (OI) is defined as the extent to which distinct and interdependent components of an enterprise constitute a unified whole. In order to achieve superior performance, organizations need to effectively integrate the constituent components such as the departments, business processes, people and technology. These components can also be external to the firm such as the business partners, suppliers, and customers. OI theory posits that firms will differ in their economic performance depending on which processes and components are integrated and the extent of integration achieved. For instance, the performance will be lower for firms that integrate their internal administrative processes as compared to those that integrate core processes across the supply chain.

SCM systems provide the fundamental capability for firms to achieve superior organizational integration. Building on the work of Barki and Pinsonneault (2005) and prior research on SCM systems, we propose that SCM systems enable three types of integration in an...
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