Chapter 17

The Effects of Two Types of IOS Diffusion on Firms’ Performance: A Cross-Country Study Between Korean and Chinese Firms

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ABSTRACT

This chapter addresses the theoretically neglected question of how the internal and external diffusion of inter-organizational systems (IOS) impacts firms’ performance improvement. The proposed model posits that organizational and relational resources affect both internal and external diffusion. In turn, they influence performance improvement. This study collected data from 187 managers in Korean and Chinese firms. It tested its research model by using partial least squares (PLS). According to the findings, two types of IOS diffusion (i.e., internal and external) mediated the relationship between organizational/relational resources and performance improvement in the supply chain context. The study also found that Korean firms were likely to externally diffuse IOS toward their business partners. Chinese firms would tend to internally diffuse IOS by deploying IOS from their partners.

INTRODUCTION

To survive in dynamic global markets, many organizations integrate their business activities with their partners by linking IOS systems (Bush, Tiwana, & Rai, 2010). IOS, described as information systems shared by two or more firms, was designed to link business processes (Bakos, 1991). By adopting IOS, firms achieve their business objectives, including efficient and timely order fulfillment, reduced cycle
times, closer relationships with partners and customers, and more opportunities to improve supply chain performance (Ranganathan, Dhaliwal, & Teo, 2004; Robey, Im, & Wareham, 2008; Zhang & Dhaliwal, 2009). Furthermore, some of the research noted that IOS could support firms’ business expansion, re-design, or internal business processes (Ranganathan et al., 2004; Zhang & Dhaliwal, 2009).

Due to the nature of IOS, firms cannot adopt IOS one-sidedly. This means that adopting or initiating IOS is not a specific firm’s one-sided decision. It is necessary for a firm to consider internal resources and relational resources when deciding to adopt IOS. For example, if a firm decides to adopt IOS, it should find a partner equally motivated to utilize IOS. In addition, the firm should continue to invest in technologies to obtain collaboration benefits. Therefore, undertaking IOS initiatives is required by both internal organizational resources and externally-relational resources.

In the case of the internal organizational resources, prior studies pointed to three information technology (IT) resources as major components of organizational resources in terms of IOS diffusion: (1) IT management support; (2) functional management support; and (3) top management support (Chwelos, Benbasat, & Albert, 2001; Iacovou, Benbasat, & Dexter, 1995; Premkumar, Ramamurthy, & Nilakanta, 1994; Ramamurthy & Premkumar, 1995; Zhang & Dhaliwal, 2009). Based on this, the chapter’s authors adopted three IT-related resources as internal organizational resources in their study. They used these resources to explain how IOS diffusion may lead to improved supply chain performance. In a dyadic supply chain relationship, relational resources are also important. This is because a firm wanting to adopt IOS must find at least one trading partner. Bala and Venkatesh (2007) underpinned that this relational view of the firm is important in terms of explaining IOS deployment. Their relational view consisted of relational specificity, relational depth, and relational extendibility. Therefore, this chapter’s authors have employed these three factors as sub-components of a firm’s relational resources.

The authors explain how internal organizational resources and external relational resources affect the supply chain performance by mediating the internal and external IOS diffusion by applying the resource-based view (RBV). Meanwhile, while Asia Pacific countries (including China and Korea) are highly dependent on business relationships. While still strong in China, these relationships are weakening in Korea (Chen, 2004). Due to the unique nature of business relationships in China and Korea, it is predicted that the impact of IOS diffusion on performance improvement varies between Chinese and Korean firms. More specifically, due to outside demand, Chinese firms improve their performance by internal diffusion while external diffusion leads to Korean firms’ performance improvement due to inside-out capabilities(Chen, 2004). This chapter will suggest that effects of IOS diffusion on performance improvement are different between Chinese firms and Korean firms. The chapter will address the research questions for the following:

1. What are the impacts of both organizational and relational resources on the improvement of a firm’s supply chain performance by mediating internal and external IOS diffusion?
2. What are the differences in IOS diffusion among firms in Korea and China?

By addressing the questions, the researchers made contributions to relevant literature in three ways. First, while organizational resources and relational resources were reviewed in prior studies, it was identified and incorporated into a unified model through this research. The authors examined how organizational and relational resources would affect two types of IOS diffusion (e.g., internal and external diffusion). Second, the authors provided empirical evidence showing the possibility for differences on the impact of two types of IOS diffusion on performance improvement. This finding could provide