

Impact of B2B E-Commerce and Supply Chain Investments in Hospitals

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INTRODUCTION

Increased investment in business-to-business (B2B) electronic commerce (e-commerce) and supply chain by hospitals has become so widespread in recent years that it can no longer be ignored. Effective use of these systems can assist hospitals in reducing procurement and supply chain costs as well as in providing accurate and timely business information and streamline orders and payments. In particular, there is a potential for hospitals and other healthcare organizations to adopt and utilize B2B e-commerce technologies to assist in procuring medicines and other medical-related supplies and ingredients from pharmaceutical companies and other healthcare organizations. For example, the use of e-commerce technologies in conjunction with video-conferencing equipment enables hospitals and other healthcare organizations to procure their products more effectively and efficiently via online detailing with pharmaceutical companies (Bexci & Subramani, 2013; Saleh, Larsen, Bergsåker-Aspøy, & Grundt et al., 2014).

B2B e-commerce involves Internet-based commercial activities between multiple organizations (Alsaad, Mohamad, & Ismail, 2014; Sila, 2013). For example, it is able to assist organizations in lowering the cost of entry and in expanding the market reach and using it as a wide-coverage and low-cost tool for venturing into new markets in the global economy (Chen, 2013; Lin, Huang, Jalleh, Liu, & Tung, 2010). Despite these benefits, organizations need to evaluate whether their B2B efforts are paying off (Tsao, Lin, & Lin, 2004). However, the less precisely bounded environment of B2B technology adds more complexity to the traditional IT measurement problem as this type of investment is physically distributed between suppliers and vendors, making the evaluation process even more difficult (Lin, Huang, & Burn, 2007). The problem becomes more evident as B2B e-commerce is used to link the supply chain or to change the structure of industries, since costs and benefits have to be tracked across functional and organizational boundaries (Liu & Lin, 2008). Existing business models are unequal to this task and planning for such systems has to encompass capabilities for managing and evaluating organizational capabilities to create value across the network of alliances, and evaluation methodologies are required to measure and monitor the performance of such investments (Lin et al., 2007; Standing, Standing, & Lin, 2008).

BACKGROUND

Teo & Ranganathan (2004, p90) have defined it as the “the use of the Internet and Web-technologies for conducting inter-organizational business transactions.” On the other hand, supply chain has been defined by Christopher (2005, pp4-5) as “a network of connected and interdependent organizations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users.” It usually consists of two or more organizations which are connected by products, services, materials, information and/or financial linkages (Stadtler, 2014). Diagrams depicting the relationships between B2B e-commerce and supply chain can be found in other publications (e.g., Nagurney, Cruz, Dong, & Zhang, 2005; Yau, 2002).

There has been some research into the relationships between user satisfaction and performance of supply chain (e.g., Narayanan, Balasubramanian, & Swaminathan, 2011; Yu, Jacobs, Salisbury, & Enns, 2013) as well as between organizational IT infrastructure and capabilities and supply chain (Liao, & Kuo, 2014; Liu, Ke, Wei, & Hua, 2013). In addition, despite the focus by recent literature of the role played by IT evaluation on realization of B2B e-commerce benefits, the importance of other organizational factors (e.g. organizational IT infrastructure and capabilities, and user satisfaction) and IT evaluation methodology adoption on B2B e-commerce benefits remain unclear. Very few studies have been conducted in both the hospital and IT evaluation settings. In particular, the practices and processes of B2B e-commerce and supply chain evaluation and benefits realization in Australian and Taiwanese hospitals remain poorly understood and relatively under-researched. Therefore, the main objectives of this proposed chapter are to:

1. Investigate B2B evaluation and benefits realization practices in hospitals; and
2. Examine the relationships between B2B evaluation and benefits realization practices, organizational IT infrastructure and capabilities, supply chain management, and user satisfaction in hospitals.

Other issues concerning organizational infrastructure such as leadership and change management culture, hierarchy, flexibility of processes are also important. However, the above issues are not discussed in the chapter due to space limitations.

The remainder of this chapter is structured as follows. First, the literature on IT evaluation is briefly reviewed. Next, the two factors that influence B2B investment evaluation practices and supply chain performance are explored. This is followed by the research methodology and empirical findings. The final section of this paper discusses these findings and their implications for senior executives, practitioners, and researchers. A key contribution of this chapter is the examination of the relationships among these organizational factors and investments in B2B e-commerce. The findings will guide IT executives in hospitals to develop their own strategies in managing the opportunities and threats that exist in their supply chains.

B2B Investment Evaluation and Benefits Realization

The gap between the actual and expected level of IT/B2B benefits is a major determinant of B2B and supply chain performance. Organizations have come to realize that it is increasingly difficult to justify the costs surrounding the development and adoption of IT investments such as B2B, R&D, and TV e-

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