



Chapter XVIII

Determinant of E-Based Success Attributes for Integrated Supply Chain System

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Abstract

An e-integrated supply chain system is an enabler that enriches the effectiveness of global supply chains. This chapter adopts factor analysis to determine four success factors: work performance quality, system quality, information quality, and service quality. A critical analysis of areas that require improvement is also conducted

Introduction

Supply chain is a management philosophy that links all logistics activities of parties involved into a single entity so that production orders can be delivered in a short life span. An effective way for linking all logistics activities together is to implement an integrated supply chain information system. Laudon and Laudon (2004) discuss the basic structure and system components of an integrated supply chain information system. Vakharia (2002) points out that the adoption of e-business technologies has been the main focus

of the development of supply chain information systems. Frohlich (2002) verifies that an e-based integrated information system has a positive effect on supply chain performance.

The applications of e-based supply chain systems have played a significant role in the fast changing business environment in the Asia Pacific region. In Hong Kong, the state of economy has gradually merged with mainland China; the local government has propelled the idea of setting an e-based logistics center, which includes the development of a super-computer platform that aids for fast e-business exchanges among trading partners in the region. This logistics center serves the role of third-party logistics, and the e-based integrated supply chain system (e-ISCS) is the basic platform for its e-based information system. In practice, e-ISCS operates differently than a conventional e-based supply chain information system; the third party logistics firms are fully responsible for the design, development, implementation, and service supports of the system. Thus, the study of e-ISCS quality has played an important role in supply chain performance.

The modeling and study of system quality of supply chain practices are well documented in the literature. Kuei and Madu (2001) identify the critical success factors for the implementing supply chain quality management concept. Narashimhan and Kim (2001) confirm a set of quality factors that contributes to the success of a conventional supply chain information system. However, literature directly linked to the e-ISCS quality is not noticeable. The e-ISCS quality has online features like Internet attributes, which were reviewed by Madu (1998), and intranet benefits, revealed by Lai (2001). This chapter determines the critical success factors for the e-ISCS and examines its performance in the supply chain. The following section will review relevant system features and practices of e-ISCS, discuss the model development, present research methodology, and discuss the findings before concluding the chapter.

E-Supply Chain System Features and Practices

This section reviews system features and practices of e-ISCS. However, the existing literature on e-ISCS features and practices are relatively sparse. This chapter borrowed system features and practices from the intra-organizational system literature. The reason is that both systems share similar features, except that e-ISCS is a totally open system and third-party logistics firms are managing their design and operations. Twenty-four common system features and practices were identified initially from literature, but these were reduced to 18 after verifying their applicability in personal interviews with five local supply chain firms and five third-party logistics firms. The following will discuss the contents of these 18 system features and practices with supporting references.

1. The system regularly enhances maintenance. Maintenance is a critical process to the success of an information system (Laudon & Laudon, 2004). Cupito (1997) states that an effective e-based system is not something we put up but something

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