

# Chapter 4.16

## Effects of Knowledge Management on Electronic Commerce: An Exploratory Study in Taiwan

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### ABSTRACT

*The Internet-enabled e-commerce field provides capabilities for firms in all sectors to reach global buyers and suppliers. Knowledge management provides frameworks to manage intellectual capital as a valuable organizational and strategic resource. Current literature on e-commerce and knowledge management primarily emphasizes the benefit of knowledge management for innovative e-commerce operations. Do knowledge management practices significantly benefit electronic commerce? If so, does the relationship work in the other direction? Does a firm's e-commerce ap-*

*plications significantly benefit knowledge management practices, as well? To test these exploratory propositions, empirical data were collected from companies in a variety of industries in Taiwan, a country emphasizing e-commerce initiatives. The results revealed significant relationships between the way businesses implement electronic commerce projects and how they experiment with knowledge management concepts, as well as interesting benefits and difficulties in implementation. These relationships were found to operate in both directions, offering reinforcing effects as well as connections.*

## INTRODUCTION

Internationally, Internet technology is an integral component of business strategy. Most firms use electronic commerce to reach customers at home and abroad. E-commerce, when properly linked with business processes and aligned with an organization's culture, aids a firm's strategic growth (Ahadi, 2004; Piris, Fitzgerald & Serrano, 2004). These initiatives can lead to important performance gains (Green & Ryan, 2005). Another global imperative is the widespread recognition of the value of intellectual capital as a major source of sustainable competitive advantage (Marr, Schiuma & Neely, 2004). To avoid basing competitive strategy on price discounting alone, a company continuously must engage in acquiring and updating the knowledge base. According to Porter (2001), intellectual assets embodied in the total business system are then difficult to duplicate.

Thus, these two developments of knowledge management and e-commerce would seem to supplement each other (Bose & Sugumaran, 2003; Fahey, Srivastava, Sharon & Smith, 2001). Knowledge management provides the mechanism for firms to keep up with innovative activities (Bakhru, 2004; Trethewey & Corman, 2001). As e-commerce information flows freely and sites are easy and inexpensive to duplicate, innovations have an increasingly shorter life span. The integration of major business processes brought about by e-commerce provides a wealth of data and information that can fuel knowledge management (Kocharekar, 2001). Yet, most discussions in the literature are largely conceptual in nature (Holsapple & Singh, 2000).

Inquiries that examine these global issues, based on actual data, are needed to obtain more insight into the relationship and directionality between the two management themes. The purpose of this study is to correct this deficiency in the literature by exploring these relationships. Thus, the primary research question is: Do knowledge

management practices significantly benefit electronic commerce? If so, does the relationship work in the other direction? Does a firm's e-commerce applications significantly benefit knowledge management practices, as well? To test these exploratory propositions, empirical data were collected from companies in a variety of industries in Taiwan. Taiwan was chosen due to its aggressive emphasis on e-commerce initiatives.

The paper first will briefly review the existing literature on both knowledge management (KM) and electronic commerce (EC) individually and then will present current literature on the linkages or supplementary relationships between the two topic areas. The paper links this literature to the paper's research propositions. Next, the case of Taiwan, a global EC leader, is discussed, along with the questionnaire development and subsequent data collection and analysis. The implications for practice call for future research in other countries in order to validate these exploratory research findings.

## LITERATURE REVIEW

### Knowledge Management

KM has captured increased attention in today's global business environment, because it views intellectual capital as manageable and suggests frameworks to help companies utilize this valuable strategic resource (Brand, 1998; Child, 2002; Kim & Mauborgne, 1999). KM is a set of business processes through which valuable knowledge is identified, collected/created, organized/stored, distributed, managed, and applied to problems or projects (Child, 2002; Davenport & Prusak, 2000; Grover & Davenport, 2001; Kim & Mauborgne, 1999; Leseure & Brookes, 2004; Pan & Scarbrough, 1998; Zack, 1999a).

Early discussions of KM practices range from a human-oriented to a technology-driven point of view. At one extreme of the continuum is the view

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