Enterprise Information Portals in support of business process, design teams and collaborative commerce performance

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ABSTRACT

Enterprise Information Portals (EIPs) have been widely adopted as platforms for the integration of knowledge management and information technology (IT). This study has been conducted from the knowledge management perspective in order to examine the influence of EIPs on collaborative commerce in the automobile industry. This study explores the integration of internal and external business processes and the coordination of collaborative design teams. An initial qualitative investigation explores the practical applications of an EIP in an automobile company. A research model is then formulated and tested using a questionnaire survey of the R&D department of a motor company in Taiwan. The results of the data analysis reveal that presence of EIPs can help a company realize the benefits of c-commerce. EIPs also can improve collaborative commerce performance by promoting the degree of integration of the enterprise process and by strengthening the process innovation and communication of collaborative design teams. The results suggest that managers should reinforce important factors, including knowledge management tools, process integration, and the quality of design teams, in order to achieve success in collaborative commerce.

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1. Introduction

Collaborative commerce (c-commerce) is a set of technologies and business practices that allows companies to build stronger relationships with their trading partners by integrating complex, cross-enterprise processes that are governed by business logic, rules, and workflows (Chen, Zhang, & Zhou, 2007). Electronic commerce (e-commerce) is the transaction activity of products, information, and services that is conducted through the electronic media. Activities outside of order arrangement, order fulfillment, account receivables, and account payables do not fall within the scope of e-commerce. C-commerce is more extensive than e-commerce, and often includes general information sharing, integration between enterprises, and the formation of extended value chains of mutual benefit (Lee, Pak, & Lee, 2003).

Many enterprises attempt to apply information systems, known as portals, to the integration of internal and external operation processes. There are often many portals designed for different purposes in a company, resulting in fragmented information access. An unintegrated intranet is not only inconvenient to the user but is also expensive to maintain; the distributed information that it holds cannot be integrated into valuable knowledge. Enterprise Information Portals (EIPs) are designed to integrate diverse sources of information and provide knowledge workers with a single gateway, login, and user-friendly browser interface to their personal working platforms (Dias, 2001).

C-commerce has been forecast to replace e-commerce as the current, trendy buzzword, which reflects real growth in its importance. The integration of views and skills from different organizations or individuals is necessary for an enterprise to promote its business efficiently and successfully. Therefore, for modern enterprises, it is important to investigate the key factors that affect c-commerce and their relationship to each other. The EIP is an important knowledge management tool for the effective integration of information and the management of intelligence capital; it can create valuable knowledge for enterprises (Carroll, 2001). C-commerce emphasizes interactive information exchange (Centola, Myer, Raisinghani, & Virgil, 2004). Therefore, it is of interest to determine whether a company can promote c-commerce through the knowledge management function of its EIP. However, despite interest in the relationship between c-commerce and EIPs, this appears to be a neglected research topic. Therefore, in the hope of gaining some insight into this relationship and perhaps understanding the factors of successful implementation, this study will investigate how the EIP knowledge management tool assists the practice of c-commerce.

In order to explore the relationship between EIP and c-commerce and construct an interactive model of some of the main c-commerce influences, three core questions are proposed. First, does the function of an EIP influence c-commerce? Second, does

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the use of an EIP help a company obtain the benefits of c-commerce through the integration of business processes? Three, for EIP function, do the features of the collaborative design team play an important role in the performance of c-commerce? We will attempt to identify key factors and build a model to test their correlation to c-commerce performance.

2. Theoretical background and research hypotheses

2.1. Knowledge management

This paper treats knowledge management as the process of managing knowledge flow. Enterprises can enhance core corporate competitiveness, the abilities of employees and communication with collaborative partners by managing the process of knowledge management. The use of information systems and technology to support effective KM is widely accepted (Braganza, Hackney, & Tanudjojo, 2009; Ibrahim & Nissen, 2005). Companies are beginning to implement information systems designed specifically to facilitate the generation, integration, sharing, and dissemination of organizational knowledge. These systems fall into four categories: content-management tools, knowledge-sharing tools, knowledge search and retrieval systems, and general knowledge management systems (KMS). The general KMS proposes overall solutions for a company's knowledge management needs (Butler & Murphy, 2007). Among the types of general KMS, EIPs can provide organizations with a rich and complex shared information workspace for the creation, exchange, retention, and reuse of knowledge (Benbya, Passiante, & Belbaly, 2004).

Since the advent of Internet technology and development of portals, knowledge management has become an achievable task. Portals, as the name suggests, are gateways to a knowledge domain (Fernandes, Raja, & Austin, 2005). This paper examines, from a knowledge management viewpoint, the relationship between the EIP systems and c-commerce by addressing the effectiveness of the former in supporting the latter. From a review of previous research (Centola et al., 2004; McDonough, Kahnb, & Barczaka, 2001; Surgency, 2001), we conclude that three major factors affect c-commerce: systems, processes, and people.

In this paper, 'system' refers to the EIP, which is a KMS tool; an EIP can promote information exchange and integration to support collaboration with other firms. 'People' refers to the enterprise's internal employees and to external c-commerce participants. In the present context, we focus specifically on the features and behav-

ior of the collaborative design team. 'Process' is the way in which people use the system to complete their tasks. In the present context, we will discuss how firms employ the EIP system to promote business process integration in a collaborative environment. The research framework has been illustrated in Fig. 1. Next, we will introduce the major components of this framework.

2.2. Enterprise Information Portal (EIP)

Detlor (2000) defines the EIP as a single-point web browser interface used within organizations to gather, share, and disseminate information throughout the enterprise. As such, these tools offer corporations the means to manage and access information from disparate sources across the firm (Ma & Agarwal, 2007). EIPs are applications that enable companies to unlock information that is stored internally and externally; they also provide users with a single gateway for personalized information that is necessary for making informed business decisions (Surgency, 2001). Based on web technology, portals are not limited to employees, but may also be accessed by external entities—suppliers, customers, and partners. According to Detlor (2000), Surgency (2001), and Benbya et al. (2004), an EIP system has six features: personalization, integration, searching, publishing, collaboration, and taxonomy. From a functional perspective, portals leverage existing information systems, data stores, networks, workstations, servers, applications, and other knowledge bases in order to provide each employee in each corporate site with immediate access to an invaluable set of corporate data anytime, anywhere (Yang, Yang, & Wu, 2005).

Previous literature focuses on EIPs with regard to their introduction (Dias, 2001; Raoi, 2003), development (Chan & Chung, 2002; Chau, Huang, Qin, Zhou, & Chen, 2006; Detlor, 2000; Kesner, 2003; Teo, 2005), implementation (El-Gohary & El-Diraby, 2010; Ryu, Kim, Chaudhury, & Rao, 2005; Scheepers, 2006), applications (Benbya et al., 2004; Klein, 2007; Muntean, 2009; Teo & Men, 2008), benefits (Chou & Chou, 2002; Teo & Men, 2008), challenges (Mee, Katz, Alem, & Kravis, 2007) and evaluation (Kreng & Wu, 2007). This study investigates the management function of EIP in the c-commerce environment, which has not been explored very much in the past.

2.3. Business process integration (BPI)

A business process is a complete, dynamically coordinated set of activities or logically related set of tasks that must be performed to
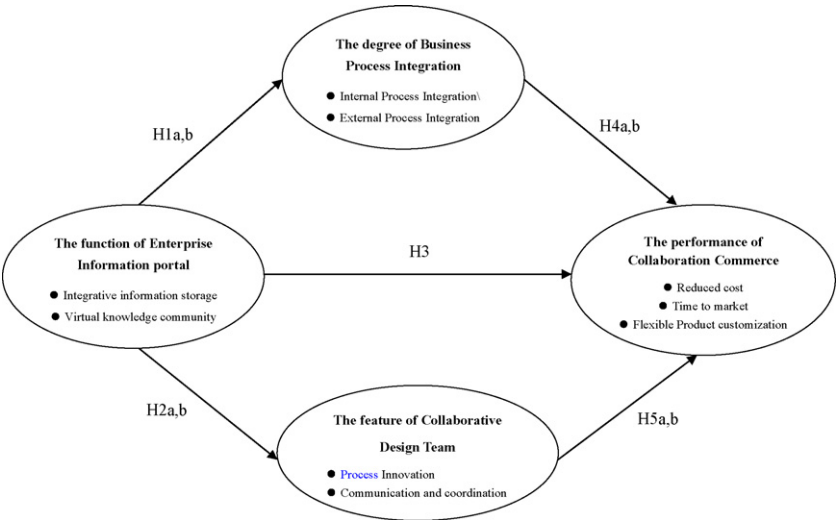

Fig. 1. Research conceptual framework.