

December 2002

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Recommended Citation

Chen, Ja-Shen; Ching, Russell; and Lam, Monica, "A PROPOSED MODEL OF THE EFFECTS OF IT DIFFUSION ON ORGANIZATIONAL ABSORPTIVE CAPACITY AND CRM INNOVATION SUCCESS" (2002). *AMCIS 2002 Proceedings*. 71.
<http://aisel.aisnet.org/amcis2002/71>

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A PROPOSED MODEL OF THE EFFECTS OF IT DIFFUSION ON ORGANIZATIONAL ABSORPTIVE CAPACITY AND CRM INNOVATION SUCCESS

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Abstract

Business to customer (B2C) e-business has opened many new opportunities for business organizations. In response to studies that underscore the importance of maintaining strong and learning relationship between the organization and customer, many have turned to customer relationship management (CRM) to manage their interactions with their external entities, particularly customers. Although IT enables CRM, other organizational factors, such as organizational absorptive capacity's effect on innovativeness, may have greater impact on its ability to continually satisfy its customers' needs (i.e., innovate). However, IT may be a critical element to absorptive capacity. This study examines the relationship between IT diffusion, organizational absorptive capacity and innovation, and proposes a research model.

Keywords: CRM, absorptive capacity, innovation, IT diffusion, e-business

Introduction

In recent years, many businesses have begun transitioning to e-business models and consequently engaging in customer relationship management (CRM). Information technology (IT)-enabled e-business has opened many new opportunities for business organizations, yet reaping the rewards of these opportunities has required them to adopt more advanced IT-enabled means. In contrast to their tradition markets and business models (i.e., brick and mortar business models), many businesses are finding themselves immersed in highly competitive, consumer driven global markets conducted over the Internet, and competing against virtual alliances, organizations that collectively work together in either horizontally or vertically integrated partnerships. Continual advances in IT have fueled this drive in competitiveness to new heights, and in cases such as the airline industry (Copeland and McKenny, 1988), have changed the way business is conducted. Thus, IT has not only changed the competitive landscape, but it also requires businesses to seek IT-based solutions to better leverage themselves. Consequently, a business organization's approach to business must now emphasize the use of IT to ensure its longevity and survival; market demands and expectations make IT a necessary resource in order to compete.

Business to customer (B2C) e-business poses several new challenges to businesses. The shift from mass marketed to micro-segmented, tailored products and services has forced businesses to establish and build closer learning relationships with their customers. As a result, many have turned to customer relationship management (CRM) to manage their relationships and interactions to gain greater insights into their (customers') needs (Ryals and Knox, 2001). However, their success with CRM largely lies in their ability to continually innovate to meet changing market conditions and customer expectations, and gain competitive advantages through products and services that cannot be easily duplicated, imitated or substituted (Peppard, 2000; Winer, 2001). This implies that business organizations must be capable of not only learning from the entities of their external environment (i.e., customers, suppliers and other sources of information), but also to be able to leverage and exploit their (organizational) knowledge to innovate. Thus, conceptually, CRM's success hinges largely on how well the business organization

absorbs pertinent information of its customers' needs and applies the knowledge it has gained toward the development of products and services that are congruent to their needs. An organization's absorptive capacity, its ability to recognize and assimilate information and apply its cumulative knowledge toward a profitable gain (Cohen and Levinthal, 1990), defines this ability.

Yet, the ability to innovate may not sufficiently meet the demands of highly competitive markets. The *speed* at which markets operate becomes the underlying concern. A common definition describes CRM as a process that utilizes technology to capture, analyze and disseminate current and prospective customer data to develop deeper and more insightful relationships, and identify and more precisely target products and services that specifically match their customers' needs (Davenport et al., 2001; Peppers et al., 1999; Ryals and Knox, 2001). Thus, IT assumes a critical role in CRM performance since it may boost the organization's abilities and subsequently productivity (*speed*). Therefore, *to what degree does IT contribute (as a moderator or mediator) to an organization's CRM performance in terms of its absorptive capacity and innovative output (i.e., products and services)? Do greater investments in IT lead to higher levels of organizational absorptive capacity and innovative output?*

The purpose of this paper is to propose a model of the effects of IT diffusion on an organization's absorptive capacity and innovation success, and examine the relationship between them in the context of CRM performance. This study proposes that greater investments in IT will not only increase organizational absorptive capacity, but will also allow the business organization to reap greater benefits from CRM and provide more tailored innovative products and services to their customers. Thus, IT influences the effects of organizational absorptive capacity CRM performance. Absorptive capacity will be examined in terms of its ability to leverage and exploit organizational resources in contributing to CRM success.

Proposed Model of IT and CRM Performance

An organization's absorptive capacity plays a critical role in determining its CRM performance. The information it learns from its customers and about pertinent market conditions will become part of its knowledge (through assimilation), which will eventually drive the innovation of products and services that directly target their individual customer's needs. Continual innovation to meet these requirements and others imposed by changing market conditions requires continual learning and knowledge accumulation. As more knowledge is amassed, the organization's power to accumulate more knowledge and more precisely direct its innovative activities becomes greater. In this study, CRM performance will be based on the organization's innovation output, and success can be tied to the organization's ability to leverage and exploit its knowledge with IT providing the means (for leveraging and exploiting it). The number of products and services produced through CRM will therefore reflect the organization's absorptive capacity. In the absence of organizational absorptive capacity, IT alone will be incapable of supporting CRM.

The proposed model of this study embodies the components of absorptive capacity and their relationships. In examining the relationship between IT diffusion and CRM performance, IT's effect as an intervening variable must be determined. It is uncertain whether organizational absorptive capacity will moderate (i.e., enable process change) or mediate (i.e., require process change) the effects of IT diffusion on innovation. A mediating effect suggests that organizational absorptive capacity influences the effects of IT diffusion on innovation. For IT diffusion to have an impact on innovation, process changes in absorptive capacity must occur among its intelligence, organization structure, diversity of knowledge, assimilation and experience components. This may include devising new IT-enabled ways in which opportunities are recognized, information is assimilated and disseminated throughout the organization, knowledge is distributed and accessed, tasks are accomplished, etc. As a result, the effects of IT may amplify or enhance the effects of organizational absorptive capacity on innovation. Greater levels of IT investment may lead to higher levels of absorptive capacity and (consequently) a greater number of innovations if process changes occurring in absorptive capacity take advantage of it (IT investment).

Proposition 1. *Organizational absorption capacity will mediate effects of IT diffusion on innovation.*

As a moderator, the interaction between IT diffusion and absorptive capacity will affect innovation. The level of absorptive capacity influences the effects of IT diffusion on innovation. Yet, at the same time, IT's diffusion effects enhance (i.e., enable) further development of organizational absorptive capacity. Essentially, organizational absorptive capacity benefits from the organization's ability to leverage its IT, which in turn is used to leverage and exploit its knowledge. The absence of absorptive capacity would dull the effects of IT regardless of its investments. Greater investments in IT may increase absorptive capacity. However, increases to absorptive capacity may not necessarily be attributed to greater investments.

Proposition 2. *Organizational absorptive capacity will moderate the effects of IT diffusion on innovation.*

Components of Absorptive Capacity

The following sections discuss the proposed components of absorptive capacity with ramifications for IT diffusion. The components include intelligence, organization structure, diversity of knowledge, assimilation and experience. IT diffusion may occur at different rates in each component.

Intelligence. Simon (1960) describes intelligence as “searching the environment for conditions calling for decision” (p.2) or action. For CRM, intelligence may include search activities linked to the discovery of new information, such as a source of new knowledge, forecasts of consumer and market trends, studies in consumer behavior, etc. In essence, intelligence provides the initial stimulus to innovate (i.e., something new has arisen that opens an opportunity to innovate). However, in searching the environment, there is the implication of filtering (information) based on whether information can be recognized (i.e., relevance) or deemed useful, and linked to currently retained knowledge.

Organization structure. Organization structure lends order to the organization’s operations and activities. Child (1972) refers to organization structure as the formal allocation of work roles and the administrative mechanism to control and integrate work activities. It provides the means for internally disseminating knowledge as well as communicating its goals and objects, and directing activities toward the attainment of these goals and objectives. Organizational absorptive capacity could yield high results when the organization’s structure promotes cross-function interactions.

Diversity of knowledge. Because learning is cumulative, it can be facilitated when new information can be linked to prior knowledge (i.e., the more that can be linked, the greater and faster the accumulation) (Cohen and Levinthal, 1990). Diversity increases the foundation on which future information can be linked, and thereby provides a more robust platform for learning. It helps ensure that new information can be *absorbed* by increasing the chances it will be recognized and linked in the existing body of knowledge. Therefore, it facilitates the innovation process by enabling individuals to make novel associations and linkages (Cohen and Levinthal, 1990), and enhances intelligence by increasing awareness.

Assimilation. Assimilation refers to the absorption and incorporation of new information into current thinking or the use of knowledge. It relies upon the existence of prior knowledge, such that investments in building and accumulating knowledge and absorptive capacity make further knowledge acquisition easier (Cohen and Levinthal, 1990). Because it guides the application of information, knowledge and principles, and defines the patterns for solutions and innovations, assimilation establishes a paradigm similar to the technological paradigm presented by Dosi (1988).

Experiences. Experiences along with research and development (R&D) activities and training, generate absorptive capacity since they comprise different aspects of organizational learning. They retain practical knowledge, provide the background for recognizing the value of reorganizing processes, and embody tacit knowledge, knowledge of *know-how* that cannot be easily codified or disseminated. Consequently, they play a critical role in building and reinforcing cognitive structures through repeated performance of tasks or applications of knowledge.

Summary

The movement toward B2C e-business opens many new challenges to business organizations. Competing in highly competitive and consumer-driven markets has shifted business emphases from mass marketed to micro-segmented, tailored products and services that target the specific needs of customers. As a result, many businesses have turned to CRM to establish closer learning relationships with their customers and gain a greater understanding of serving them. However, CRM performance must be gauged by the organization’s ability to continually innovate products and services while remaining competitive. An organization’s absorptive capacity becomes a critical element as it assimilates customer information (along with other information) and further develops the organization’s knowledge. Organizational absorptive capacity in turn forms the basis for innovations. Rapid changes and unexpected shifts in market expectations place additional demands on CRM to innovate quickly. Thus, the adoption of innovative IT may help in leveraging the organization’s absorptive capacity. However, the effects of IT diffusion on absorptive capacity and innovation are uncertain. This study proposes the development of a model to further examine their relationships.

References

(Available upon request.)