ICEB 2004 Proceedings

International Conference on Electronic Business (ICEB)

Winter 12-5-2004

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ABSTRACT

Continual advances in information technology (IT) have opened new business opportunities in global marketplaces. As a result, many businesses have turned to CRM to gain greater insights into their customers and apply this knowledge toward forging long-term relationships with them. This study examines the relationships of CRM practices (marketing and operational programs) with three antecedent elements (IT investments, absorptive capacity, strategic alignment), CRM effectiveness and firm (business) performance. The results of a survey suggest the following: absorptive capacity and strategic alignment have positive effects on CRM practices, CRM practices affect CRM effectiveness, CRM effectiveness affects firm performance, and CRM effectiveness mediates the effect of CRM practices (marketing programs) on firm performance. Hence, the CRM practices a business adopts will have an impact on its performance.

Keywords: customer relationship management, information technology, absorptive capacity, strategic alignment, CRM effectiveness

1. INTRODUCTION

Continual advances in information technology (IT) have opened the world of electronic commerce (e-Commerce) for businesses to pursue global marketplaces. Predictions for 2005 suggest that worldwide e-commerce will exceed $5 trillion USD, which will be fueled by over a billion Internet users [13], [17], [25]. In contrast, International Data Corporation estimated the e-commerce market at $1 trillion for 2003.

Yet, as more businesses enter the Internet-enabled electronic marketplace, competition becomes keener. In seeking means that provide greater competitive advantages, many have turned customer relationship management (CRM), commonly described as an information system to assist the customer retention process or a methodology that extensively employs IT, particularly database and Internet technologies, and enhance relationship marketing (RM) effectiveness and operational practices.

CRM helps a business identify its most valuable customers, and develop, integrate and focus its competencies on forging valuable long-term relationships that deliver superior value to them [20]. It behooves the business to identify and understand these customers to ensure future performance and profitability. However, achieving success also requires investments in technological resources and a clear vision of the business' direction and purpose. Consequently, an understanding of the relationship among the factors that affect and influence CRM practices and performance underlie the achievement of CRM effectiveness and eventually the business' performance.

This study examines the relationships surrounding CRM practices and its eventual effect on a business' performance. It proposes that three vital antecedent elements, IT investments, organizational absorptive capacity and strategic alignment, shape the CRM practices a business adopts, such as those for its marketing and operational programs. Furthermore, these CRM practices will impact its CRM effectiveness and eventually its performance. Because the three elements reflect the degree to which the business has enriched itself, they represent the building blocks that extend the capabilities of CRM. However, in this successive relationship, CRM effectiveness will meditate the effects of its practices on its business performance. Investments to the practices will affect performance but only if they impact CRM effectiveness. Furthermore, the competitive nature of the industry will moderate the effects of CRM practices on CRM effectiveness. Because businesses respond to market pressures according to the competitive intensity of its industry, practices will vary. Given the interactions of these factors, *how do investments in CRM impact the business' performance?*

2. BACKGROUND

CRM provides a business with an enterprise approach to understanding and influencing customer behavior through meaningful communication. It involves targeting the right customer with the right product or service through the right channel at the right time (Swift, 2001), attracting (acquiring), developing and maintaining successful customer relationships over time

[4], [7], and building customer loyalty [15] through efficient and effective two-way dialogues [19]. As a result, CRM improves a business' ability to acquire and retain customers and build their loyalty, a competitive asset [8].

The insights a business gains through CRM lead to customized products and services that more precisely match its customers' needs and impede competitors from duplicating, imitating or substituting them [18], [24]. With these refined and appealing offerings, a business can expect not only greater satisfaction and continued patronage from its customers, but other benefits in the form of reduced costs and sustained profitability.

Through advanced computing power and high-speed communication networks over the Internet, CRM allows businesses to continually learn about and monitor their customers' needs and expectations, and innovatively respond to them [19]. As a result, businesses can adopt more customer-centric marketing strategies (as opposed to mass-marketing strategies). IT also allows an organization to quickly collect, store, manipulate and disseminate information throughout its operations and with other businesses, such as its supply chain partners, to increase its organizational knowledge and improve its operational efficiencies. IT-based knowledge discovery techniques (i.e., marketing intelligence), such as data mining, online analytical processing (OLAP) and intelligent agents provide the means for building organizational knowledge and further leveraging it for a competitive advantage or profitable gain. Operational benefits involve activities and programs targeting efficiency gains and profitability.

CRM embodies many of the concepts of relationship marketing (RM), a marketing paradigm that focuses on developing close personal relationships, interactions and social exchange between a business and its customers and business partners over time to enhance the its (business') competitive response to continually changing markets [26]. CRM expands upon this concept through its emphasis on information management [18]. Thus, CRM helps focus the business on achieving personal long-term relationships with its customers through information gathered to form a deep understanding of their characteristics, behaviors, needs and expectations, and draw closer to achieving a one-to-one relationship. As a management tool, it directs enterprise resources towards the fulfillment of the organization's goals and objectives.

A business' success with CRM also lies with its execution or practices. CRM practices refer to the actions a business takes to retain its current and attract potential customers through personal touches in fulfilling and satisfying their individual needs. Expanding upon the foundational studies of Applegate et al. [3] and Karimi et al. [12], CRM practices can be divided into two categories: CRM marketing programs and CRM operational programs.

A business' success with CRM will contribute to its (business) performance. However, this depends on the presence of factors and a sequence of relationships that represent different aspects of CRM. This study examines the interactions tied to achieving success with CRM.

3. RESEARCH MODEL AND HYPOTHESES

Figure 1 illustrates the research model of this study. The model proposes that a business' investments in IT and absorptive capacity, and its commitment to strategic alignment (of IT and the business' strategy) will positively affect its CRM practices (marketing and operational programs), and consequently its CRM effectiveness and (firm) performance. The model also proposes that CRM effectiveness will mediate the effects of CRM practices on firm performance, and industry competition intensity will moderate the effects of CRM practices on CRM effectiveness.

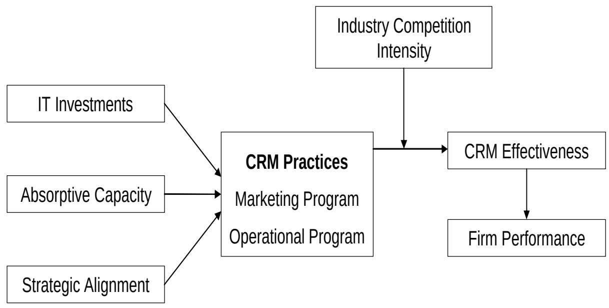

Figure 1 . Research model

Because of CRM's reliance on IT, IT investments determine the extent of CRM's capabilities to support the business' endeavors. The greater the investments the more reasonable it is to expect greater achievements. Thus, IT investments play a major role in shaping CRM practices.

H1: *IT investments have a positive relationship with CRM practices*

H1a: *IT investments have a positive relationship with CRM marketing programs*

H1b: *IT investments have a positive relationship with CRM operational programs*

Organizational absorptive capacity forms the basis for organizational knowledge and the business' ability to innovate. It results from the cumulative learning activities of the organization's individuals and the transfer of knowledge within the organization through a common language [6]. Organizations that have amassed knowledge of their market requirements and customers' needs are more inclined toward practicing marketing intelligence and information sharing to produce knowledge, and leveraging information and knowledge to satisfy their customers with the goal of gaining their loyalty.

H2: *Absorptive capacity has a positive relationship with CRM practices*

H2a: *Absorptive capacity has a positive relationship with CRM marketing programs*

H2b: *Absorptive capacity has a positive relationship with CRM operational programs*

Because IT enables CRM and extends its capabilities, the strategic alignment between a business' IT and business strategies will impact CRM practices. The alignment reinforces the success of CRM practices. The degree to which strategies align (i.e., strategic alignment) will impact CRM practices, with greater alignment resulting in better practices.

H3: *Strategic alignment has a positive relationship with CRM practices*

H3a: *Strategic alignment has a positive relationship with CRM marketing programs*

H3b: *Strategic alignment has a positive relationship with CRM operational programs*

CRM effectiveness reflects the success of CRM practices. In particular, it examines the outcomes of the business' practices in achieving customer benefits, including social, psychological, economic and customization [9], and business benefits, such as those related to cost reductions, profitability and efficiencies. Thus, greater achievements in CRM practices will be associated with greater heights of CRM effectiveness.

H4: *CRM practices have a position relationship with CRM effectiveness*

H4a: *CRM marketing programs have a positive relationship with CRM effectiveness*

H4b: *CRM operational programs have a positive relationship with CRM effectiveness*

Prior studies have found a positive link between customer satisfaction and business (firm) performance [1], [2]. Customer loyalty can increase firm performance through the reduction of acquisition and operating costs, and increases in (customer) price tolerance and referrals [11], [16], [22]. Thus, greater levels of CRM effectiveness should have a positive impact on firm performance.

H5: *CRM effectiveness has a positive relationship with firm performance*

Reichheld and Sasser [22] cite a high correlation between customer retention and profitability, such that a five percent increase in customer retention yields improvements in long-term profitability (as stated in terms of net present value) between 20 and 85 percent. Thus, improved CRM practices should have a positive effect on firm performance.

H6: *CRM practices have a positive relationship with firm performance*

H6a: *CRM marketing programs have a positive relationship with firm performance*

H6b: *CRM operational programs have a positive relationship with firm performance*

Businesses will eventually derive benefits from their CRM practices but through CRM effectiveness. Although CRM practices reflect a business' proficiency in leveraging its IT, absorptive capacity and strategic alignment between IT and business strategies, a business will directly benefit from the effectiveness of CRM (i.e., performance attributed to CRM). Given this relationship, CRM effectiveness will mediate the effects of CRM practices on firm performance.

H7: *CRM effectiveness mediates the relationship between CRM practices and firm performance*

H7a: *CRM effectiveness mediates the relationship between CRM marketing programs and firm performance*

H7b: *CRM effectiveness mediates the relationship between CRM operational programs and firm performance*

The role of competition intensity influences a business' responsiveness to customer needs and expectations through product and service offerings [21]. Prior studies have shown the importance of competitive threats to innovation diffusion [5], [14]. Hence, industry competition intensity may influence CRM practices for its effect on CRM effectiveness.

H8: *Industry competition intensity moderates the relationship between CRM practices and CRM effectiveness*

The operational definitions to measure the variables (constructs) were taken from prior studies to test the hypotheses.

4. METHODOLOGY AND ANALYSIS

A survey was conducted on a stratified sample composed of 598 randomly selected companies listed in the Taiwan Stock Exchange (TSE) (438) and on the over-the-counter (OTC) markets (160). Items were adopted from prior studies and stated on five-point Likert-type scales (1 = strongly disagree, 5 = strong agree). The survey instrument was pre-tested on six experts and mangers with extensive CRM practice experiences to elicit their comments and opinions. Subsequent adjustments to improve the questionnaire's clarity were made.

The questionnaires were mailed with a cover letter explaining the purpose of the survey and instructions on its completion, and a return envelope. A total of 161 responses were received for a response rate of 26.9 percent. However, nine questionnaires were returned incomplete and discarded. This reduced the sample size to 153 responses (25.6 percent response rate). A test for sampling bias showed no significant differences among the composition of the sample, the surveyed groups and industry (TSE and OTC). Also, no significant differences were found in a test for non-response bias that compared early and late responses.

A confirmatory factor analysis (CFA) was conducted to assess the discriminant and convergent validity of the items. The values obtained for the measures assess their (measures') validity which is inferred if a measure's factor loadings meet or exceed a criterion value of .40. The results indicate an acceptable level of convergent and discriminant validity.

The maximum likelihood estimation method was used to estimate the structural equation model (SEM) in LISREL 8.3. Figure 2 shows the path loading and coefficient alphas of the constructs. Table 1 summarizes the LISREL estimates and Cronbach alphas of the latent variables.

The analysis of the results generally supports the research model, although not all hypotheses are supported (Table 1). Of the three factors leading to CRM practices, two appear to have positive relationships. The effects of IT investments on CRM marketing and operational programs were not significant (H1 not supported). In contrast, the effects of absorptive capacity and strategic alignment on both CRM practices variables were found significant (H2 and H3 supported). This suggests that organizational factors consistently influence CRM practices, more often than IT investments. Although, IT investments are important to businesses, they may not be a primary consideration to an organization's intended use of CRM. Also, it may be assumed from a practical view point that IT is an integral part of CRM, such that CRM does not exist without IT. This lends further support to CRM as an RM solution and not one of IT.

The data support the positive relationships between CRM practices and CRM effectiveness (H4 supported), and CRM effectiveness and firm performance (H5 supported). Both marketing and operational programs play vital roles in achieving CRM effectiveness. Marketing programs focus resources on customer sales, service and support, and essential interface elements for ensuring continued patronage. They strive to gain the trust and confidence of the customer. With operational programs, activities center on the logistics of product and service delivery, ensuring their timely and satisfactory delivery. Both programs are important to the longevity of business' relationship with its customers, particularly to maintain customer satisfaction. The support of H5 suggests that maintaining customer satisfaction and loyal (CRM effectiveness) are important aspects of a business that are tendered through CRM. Because CRM practices enhance CRM effectiveness and CRM effectiveness in turn increases a business' performance, improving the practices will have an eventual impact on firm performance.

In the relationship between CRM practices and firm performance, only CRM operational programs have a positive relationship (H6b support); CRM marketing programs are not significant (H6a not supported). Unlike operational programs, the outcomes of marketing programs tend to be intangible and measured in non-monetary terms (i.e., customer satisfaction, loyalty, etc.). Because operational programs objectives and firm performance are gauged monetarily (i.e., costs, profits), both are compatible for measurement under the same terms and sharing a consequential relationship (i.e., one leading to the other).

The results of H4, H5 and H6 (Table 1), and the significant correlations between CRM marketing program and firm performance, and CRM operational program and firm performance suggest that CRM effectiveness mediates the relationship between marketing programs and firm performance (H7a supported) and only partially mediates the relationship between operational programs and firm performance (H7b partially supported). A mediating effect occurs when variations of the independent variables account for variations in the mediator, variations in the mediator account for variations in the dependent variable, and when controlled the independent variables have no effect on the dependent variable. The absence of a direct impact of marketing programs on firm performance (H6a) and the presence of relationships between marketing programs and CRM effectiveness and CRM effectiveness and firm performance indicates the effects have been mediated by CRM effectiveness. However, the presence of positive relationships revealed by H4b, H5 and H6b suggests CRM effectiveness only partial mediates the relationship between operational programs and firm performance.

Although prior studies suggest that competition intensity influences business practices, this study's results do not support a moderating effect of industry competition intensity on the relationship between CRM practices and CRM effectiveness (H8 not supported). A moderator enhances (or reduces) the effect of the independent variables on the dependent variable. A multiple regression model was developed to test for the moderating effect. Because the interaction of CRM practices and industry competitive intensity is not significant, a moderating effect does not exist (Table 4). Upon further inspection, the data reveal a high mean (4.09) for the measure of competition intensity. This infers that competition intensity does not vary over industries and it becomes indistinguishable. Thus, factors other than competition intensity influence CRM practices.

The maximum likelihood estimation method was used to measure the overall fit of the model (in LISREL 8.3). Hoelter [10] suggests that the data are supportive of the model when the Critical N (CN) exceeds 200. The sample's CN of 519.16 indicates the data appropriately fit the model. The goodness of fitness indicators summarized in Table 5 also indicates a good fit.

Table 1. Summary of test hypotheses

Hypo-thesis	LISREL Estimates	t-value	Cronbach Alpha	Result
H1a	0.02	0.18	0.957 (IT investments)	Not supported
H1b	0.18	1.78		Not supported
H2a	0.37	4.37	0.922 (Absorptive capacity)	Supported
H2b	0.27	3.58		Supported
H3a	0.41	3.49	0.941 (Strategic alignment)	Supported
H3b	0.65	5.44		Supported
H4a	0.51	7.11	0.787 (Marketing programs)	Supported
H4b	0.46	7.00	0.854 (Operational programs)	Supported
H5	0.27	2.26	0.961 (CRM effectiveness)	Supported
H6a	0.17	1.75	0.927 (Firm performance)	Not supported
H6b	0.22	2.49		Supported
H7a	-	-		Supported
H7b	-			Partially Supported[1]
H8	-	0.272		Not Supported

5. CONCLUSIONS

As more businesses enter the global electronic marketplace and engage in e-Commerce, competition among them intensifies. To better serve their customers and gain their loyal, many have turned to CRM. Understanding the relationships among the elements and components that make up CRM will lead to more effective use of CRM and a greater contribution to profitability. This study has shown that an organization's investments in absorptive capacity and commitment to aligning its IT and business strategies play largely in forming CRM practices (marketing and operational programs). Significant boosts to CRM practices will lead to greater CRM effectiveness, which in turn contributes to profitability. Thus, businesses entering e-Commerce and investing in CRM should understand the organizational commitments and activities surrounding a CRM implementation. Although IT enables many aspects of e-Commerce and integrates activities across organizational boundaries, its role in CRM other than an enabler and integrator may not be assumed as an essential part of CRM. Thus, achieving CRM effectiveness lies in how the business leverages and exploits its knowledge.

ACKNOWLEDGEMENTS

This study was supported in part by the National Science Council of Taiwan, China.

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