Value Creation from
Customer Relationship Management Systems

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客户关系管理系统
如何为企业创造价值

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内容提要

企业如何利用客户关系管理（CRM）系统创造企业价值？影响这一价值创造过程的因素是什么？本书对 CRM 系统价值产生过程中资源和竞争环境的作用，IT 治理的决策权力架构和决策执行机制，以及 CRM 对劳动生产率、赢利性和市场价值影响的时滞效应，进行了深入研究。研究表明：（1）CRM 技术资源和组织互补资源主要通过为企业创造战略性收益来提高企业绩效，尽管 CRM 在面向客户的业务流程中也产生了操作性收益；（2）在激烈的竞争环境中，技术资源对战略性收益的作用显著减小，而对组织互补资源的作用增大。在 CRM 的决策执行中，企业高层的纵向支持和 IT 与业务经理间的横向协作尤为重要。集权型的决策权力架构，由企业高层来制定 CRM 相关决策，会更有利于 CRM 决策的实施；（3）CRM 对于企业劳动生产率、赢利性和市场价值产生的积极影响具有持续十年以上的"长尾"时滞效应。

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Introduction

In view of the intensified competition, firms are increasingly adopting Customer Relationship Management (CRM) systems to collect customer data, analyze customer value, and improve business profitability (Rigby and Ledingham 2004, Rigby et al., 2002). CRM systems are enterprise applications that support and integrate customer-oriented business processes such as marketing, sales, and customer services to manage business interactions with customers (Gefen and Ridings 2002, Karimi et al., 2001). CRM systems can help firms automate customer-oriented business processes to reduce costs and increase productivity, more importantly, firms rely on CRM systems to accumulate and analyze customer data for identifying most profitable customers and addressing their needs, thus leading to enhanced customer satisfaction and improved profitability (Karimi et al., 2001). The promising opportunities enabled by CRM have been driving the CRM market to grow rapidly. It is estimated that the annual total spending on CRM hardware, software, and services is about \$17.7 billion by 2006, increasing at an annual rate of 6.7% (Aberdeen Group, 2003). The total sales for licensed CRM software in 2004 are estimated to be \$2.8 billion (Songini, 2004).

Although firms are boosting their CRM investments, they have been witnessing both large CRM successes and failures in reality (Rigby et al., 2002); On the one hand, firms such as First American Corporation (FAC) and Harrah's Entertainment have been successful in leveraging CRM systems to enhance their internal efficiency, customer knowledge, and thus business profitability (Goodhue et al., 2002); On the other hand, a significant portion of firms have failed to derive business value from their million-dollar CRM initiatives (Rigby et al., 2002). A survey of over 1,500 firms reported that 41% of firms' CRM initiatives were either close to failure or experiencing substantial difficulties (TDWI, 2000). Therefore, it is not clear whether CRM systems are truly creating significant business value for firms.

The mixed evidence on the business value of CRM calls for research on this important issue. Yet, the literature on CRM systems has been mainly composed of individual case studies, product testimonials, and exploratory surveys, with large-scale empirical analysis being largely absent due to the unavailability of relevant data (Romano and Fjermestad, 2001; Mithas et al., 2005). In view of this, we propose to study value creation from CRM systems, i. e. the improvements of value chain activities and firm performance resulting from the use of CRM systems. Toward this end, we conduct three inter-related studies which correspond to the three chapters of this book respectively. The structure of this book is shown in Figure I.

In Chapter 1, we adopt the resource-based view to investigate the business value of CRM systems. We develop a conceptual model specifically tailored to CRM systems, which includes both technological resources (CRM functionality, system integration, and CRM skills) and complementary resources (organizational alignment). They work together to generate operational and strategic benefits in customer-oriented business processes and thus improve firm performance. To probe deeper into the role of competition, we further theorize how competition intensity moderates the value of resources and the link from process gains to firm performance. We empirically examine the theoretical model on a dataset of 150 U. S. firms in the banking industry. The results show that: (1) CRM resources improve firm performance mainly through creating strategic benefits such as increased customer retention and improved product and service, although there are significant operational benefits such as efficiency gains and cost reduction in customer-oriented business processes; (2) in different competitive environments, the same resources play different roles in creating strategic benefits (but not operation benefits): technological resources have a weaker

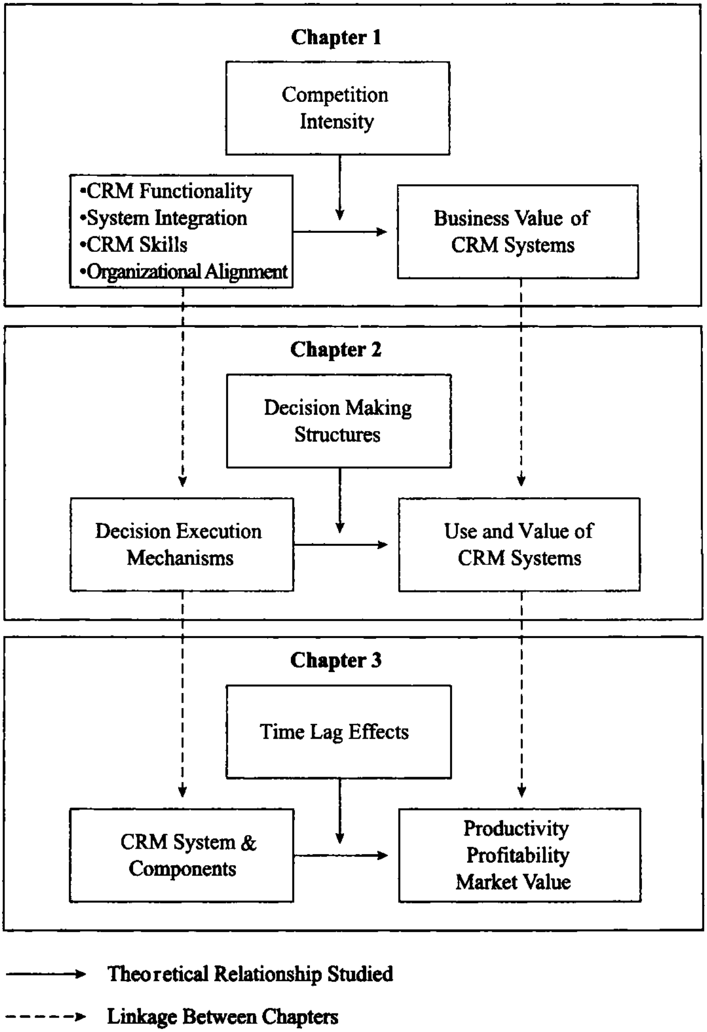

Figure I The Structure of this Book

impact on strategic benefits for firms in more competitive environments, while organizational alignment has a stronger impact in such environments; (3) operational benefits tend to be "competed away" in more competitive environments, while strategic benefits sustain to generate performance advantage in spite of competition. These findings provide important implications for understanding how CRM value is shaped by various resources in competitive environments.

In Chapter 2, we focus on the role of IT governance, one critical organizational factor, in CRM value creation. Drawing upon the structuration theory of technology assimilation and the literature on IT governance, this study develops a conceptual model to examine the role of IT governance in post-adoption stages of CRM diffusion, i. e. CRM use, impacts on business processes, and impacts on firm performance. While the literature mainly addresses the forms and contingencies of IT governance structures for decision making, we focus on IT governance mechanisms for decision execution, that is, the role of top management, business managers and IT managers in post-adoption stages of technology diffusion and how these groups are held accountable for their roles. We conceptualize decision execution mechanisms of IT governance as including two dimensions: vertical advocacy from top management and horizontal coordination between business and IT managers. Decision execution mechanisms are assumed to facilitate CRM use and value creation. Further, we investigate the moderation effect of decision making structures (centralized vs. decentralized) on the effectiveness of decision execution mechanisms. We analyze a dataset of 150 U. S. firms in the banking industry to examine the model and associated hypotheses. Our results show that: (1) decision execution mechanisms, including both vertical advocacy and horizontal coordination, significantly contribute to the three stages of CRM diffusion, especially CRM use and business process performance; (2) decision execution mechanisms are more effective in facilitating CRM diffusion under a centralized decision making structure where top management makes decisions on CRM initiatives. In particular, vertical advocacy has a greater effect under such a centralized structure (than a decentralized structure), while horizontal coordination has a greater effect under a decentralized structure. In addition, process-level benefits are more effectively transferred into firm performance in a centralized structure; (3) CRM use improves firm performance mainly through creating operational and strategic benefits in customer-oriented business processes, while its direct impact on firm performance is not significant. These findings have important implications for understanding how IT governance shapes the diffusion of CRM technology.

In Chapter 3, adopting the production-function approach and the economic perspectives, we attempt to examine the business value of CRM systems in terms of productivity, profitability, and market value growth. More importantly, we investigate how long it would take for such gains to materialize, i. e. the lag pattern of CRM value. Accordingly, we develop two hypotheses and test them using regressions on a dataset of 150 U. S. banking firms. Our results show that: (1) CRM adoption significantly improves productivity, and moderately increases profitability (in terms of ROA, ROE, and profit margin) and market value (in terms of Tobin's q); (2) there exists a long-tailed time lag of CRM value in that the effects of CRM last over ten years, especially, early adopters derive greater productivity and profitability gains from CRM; (3) different CRM components (functionalities, integration, and organizational capital) contribute to different aspects of value creation; (4) CRM has a great effect on profitability in commercial banks (in terms of ROE and profit margin), but a greater effect on productivity and market value in retail banks; (5) firm characteristics such as firm size and resource endowment significantly determine the type of CRM firms adopt, the approach they use to implement CRM, and therefore the benefits that they realize from CRM; the "best practice" of CRM seems to be a customized CRM developed in house and implemented using the "Phase In" approach. These findings provide important implications for understanding whether, when, and how firms can reap the business value of CRM systems. This study thus extends the literature on IT business value to the context of CRM. Especially, the long-tailed lag period of over ten years tends to be much longer than traditionally expected, shedding new light on the lag value of specific IT applications.

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Chapter 1 The Business Value of Customer Relationship Management Systems: A Resource-Based Perspective

1.1 Introduction

As the competition for customers intensifies, firms are striving to improve their interactions with customers by investing in CRM systems (Rigby et al., 2002). CRM systems are enterprise applications that manage business interactions with customers through integrating customer-oriented business processes, including marketing, sales, and customer services (Gefen and Ridings, 2002; Karimi et al., 2001). Firms use CRM systems not only to automate customer-oriented business processes to reduce costs, but also to collect and analyze customer data to better fulfill customer needs and improve customer satisfaction, leading to increased selling opportunities (Karimi et al., 2001). Driven by firms' high expectation of the potential of CRM systems, CRM software market is growing rapidly. It is estimated that the total annual spending on CRM hardware, software and services is \$17.7 billion by 2006, with an annual growth rate of 6.7% (Aberdeen Group, 2003). The total sales for licensed CRM software in 2004 is \$2.8 billion (Songini, 2004). Although firms are boosting their CRM investments, it remains unclear whether such investments can generate significant business payoffs (Rigby et al., 2002). In fact, firms have seen vastly different outcomes of CRM investments (Rigby and Ledingham, 2004).

Firms such as FAC and Harrah's Entertainment have been successful in leveraging CRM systems to improve their customer understanding, product/service quality, cost efficiency, and thus profitability (Goodhue et al., 2002).

FAC, a comprehensive financial-services holding company, has successfully implemented its CRM system that includes a data warehouse called VISION and a variety of functionalities for customer-oriented business processes. FAC uses this CRM system to integrate customer data, profitability patterns, and information on revenues and costs. In addition, FAC has effectively changed business processes to facilitate the move to CRM. As a result, FAC is able to identify the top value customers by analyzing the profitability of their historical transactions with FAC, predict customer churns through analysis of customer information, and promote its offerings and profitability. These efforts shifted FAC from losses of $60 million in 1990 to profits of $211 million in 1998 (Goodhue et al., 2002).

Harrah's Entertainment has been using WINet (a data warehouse which collects data from Harrah's casino, hotel, and event systems) and relevant CRM applications to support marketing campaigns and various analytical applications. The CRM initiative enables Harrah's to customize its offers and reward customers based on market segmentation analysis and customer profiling. By leveraging the CRM system, Harrah's has created a brand identity, operated its casinos in an integrated manner, and provided consistent customer rewards across the properties in different locations. Such efforts have led to a doubled customer responses to Harrah's offers and 62% of return on its IT investments (Goodhue et al., 2002).

Some other firms, however, have failed to derive business value from their million-dollar CRM initiatives, partly due to the difficulty in managing organizational changes required by CRM implementation (Rigby et al., 2002). A survey of more than 1,500 firms finds that 41% of the firms with CRM projects were either experiencing significant difficulties or close to failure (TDWI,2000). As CRM systems facilitate customer-oriented business processes across multiple departments (e. g. marketing, sales, and customer service), CRM implementation involves extensive organizational alignment in business processes, corporate strategies, management support, and skill development (Goodhue et al. ,2002). As estimated by an industry report, problems in these implementation activities account for 65% of CRM project failures (McKinley, 2000). Different CRM outcomes have raised significant doubts about the business value of CRM systems.

Further, viewing the intensified competition, firms are increasingly aware of the importance of CRM systems. Existence of efficient markets for CRM systems casts doubt on the extent to which CRM systems can indeed serve as a source of performance advantage, especially when intensified competition and imitation are present (Porter, 2001). On the one hand, intensified competition makes it more difficult for firms to derive and retain value from CRM technology *per se* due to its commoditization and competitors' imitation (Porter, 2001); on the other hand, firms in highly competitive environments such as FAC and Harrah's are able to leverage CRM systems to enhance customer satisfaction and improve product and offering, and thus achieve superior firm performance (Goodhue et al. ,2002). This suggests that firms in competitive environments can develop distinctive, CRM-enabled resources to gain performance advantage. Therefore, competition may significantly affect how firms derive business value from CRM systems.

CRM practice has provided mixed evidence on the business value of CRM, calling for research on this important issue (Mithas et al. ,2005; Romano and Fjermestad, 2001). Two studies have empirically found that

CRM use significantly increases customer satisfaction and retention (Mithas et al.,2005;Jayachandran et al.,2005). However, evidence on the performance effects of CRM tends to be mixed. Aral et al. (2006) found that CRM go-live events are significantly associated with productivity and profitability improvements based on a dataset of 623 firms. Another study by Hendricks et al. (2007) analyzed 80 companies that announced CRM implementations, but found no significant effects of CRM on profitability or stock returns. Therefore, it is important to further investigate the business value of CRM through large-scale empirical analysis. Moreover, there is limited theoretical examination on whether and how CRM-related resources allow firms to create value. Especially, the effect of competition deserves further examination in the CRM context. As an important environmental factor, competition plays a significant role in shaping firms' use of information technology to improve business performance (Barney, 1986).

Motivated by the above considerations, our study focuses on three key research questions: (1) Does CRM create business value in terms of business process and firm performance improvement? (2) What are the key factors driving CRM value? (3) How does competition affect the business value of CRM? To better understand these issues, we draw upon the Resource-Based View (RBV) for theoretical guidance. The RBV attributes firms' performance advantage to their leverage of heterogeneous resources (Barney, 1991). Based on this theory, we develop a conceptual model that features a combination of technological and complementary resources as significant antecedents of CRM value. Further, we theorize how the resource-performance relationships are moderated by competition. The book is organized as follows. We first review the relevant theories and develop our conceptual model and hypotheses. We then elaborate our research methodology, data analysis, and the results. The book closes with a discussion of research findings, limitations, and implications for research