ORIGINAL EMPIRICAL RESEARCH

Customer relationship management and firm performance: the mediating role of business strategy

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Abstract As managers and academics increasingly raise issues about the real value of CRM, the authors question its direct and unconditional performance effect. The study advances research on CRM by investigating the role of critical mechanisms underlying the CRM-performance link. Drawing from the sources→positions→performance framework, the authors build a research model in which two strategic postures of firms—differentiation and cost leadership—mediate the effect of CRM on firm performance. This investigation also contributes to the literature by drawing attention to the differential impact of CRM in diverse industry environments. The study analyzes data from in-depth field interviews and a large-scale, cross-industry survey, and results reveal that CRM does not affect firm performance directly. Rather, the CRM-performance link is fully mediated by differentiation and cost leadership. In addition, CRM's impact on differentiation is greater when industry commoditization is high.

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Introduction

Understanding how firms can profit from their customer relationships is highly important for both marketing practitioners and academics (Boulding et al. 2005; Payne and Frow 2005). Prior research has characterized customer relationship management (CRM) as fundamentally reshaping the marketing field and evolving as a part of marketing's new dominant logic (Day 2004). Investigators have argued that the firm's practices for leveraging associations with customers can be fundamental to sustaining a competitive advantage in the market (Hogan et al. 2002; Mithas et al. 2005).

However, these claims are in contrast to growing skepticism about CRM. As Homburg et al. (2007) and Srinivasan and Moorman (2005) note, managers increasingly raise issues about the real value of CRM. The Gartner Group (2003), for example, has found that approximately 70% of CRM projects result in either losses or no bottom-line improvements in firm performance. Similarly, recent academic studies report inconclusive findings regarding the performance effect of CRM. As Table 1 indicates, results regarding the relationship between CRM and performance have been mixed, with several studies finding positive relationships, others identifying insignificant links, and two reporting negative relations. Consequently, the *direct* and *unconditional* performance effect of CRM has become questionable (for a similar assessment, see Ryals 2005).

Table 1 Selected empirical studies on performance implications of CRM

Author(s)	Adopted perspective(s) of CRM	Performance variable(s)	Impact of CRM	Sample
Day and Van den Bulte (2002)	Customer relating capability decomposed into three components: a) orientation, b) information, and c) information, and c) configuration.	1) Customer retention[(s.r.)] 2) Sales growth[(s.r.)] 3) Profit[(s.r.)]	Positive	345 firms from various industries
Hendricks et al. (2006)	CRM systems: provide the infrastructure that facilitates long-term relationship building with customers.	1) Long-term stock price performance[(a.d.)] 2) Profitability measures[(a.d.)]	Insignificant	80 firms from various industries
Jayachandran et al. (2004)	Customer knowledge process: refers to the activities within an organization focused on the generation, analysis, and dissemination of customer-related information for the purpose of strategy development and implementation.	Firm performance[(s.r.)]	Positive	227 retailers
Jayachandran et al. (2005)	1) Customer relationship orientation: reflects the cultural propensity of the organization to undertake CRM. 2) Customer-centric management system: refers to the structure and incentives that provide an organization with the ability to build and sustain customer relationships. 3) Relational information processes: systematize the capture and use of customer information so that a firm's effort to build relationships is not rendered ineffective by poor communication, information loss and overload, and inappropriate information use. 4) CRM technology use: includes front office applications that support sales, marketing, and service; a data depository; and back office applications that help integrate and analyze the data.	Customer relationship performance[(s.r.)]	Positive (of customer relationship orientation, customer-centric management systems, relational information processes), insignificant (of CRM technology use)	172 large business units from various industries
Mithas et al. (2005)	Customer relationship management applications: facilitate organizational learning about customers by enabling firms to analyze purchase behavior across transactions through different channels and customer touchpoints.	1) Customer knowledge[(a.d.)] 2) Customer satisfaction[(a.d.)]	Positive	360 large U.S. firms
Ramani and Kumar (2008)	Interaction orientation: reflects a firm's ability to interact with its individual customers and to take advantage of information obtained from them through successive interactions to achieve profitable customer relationships.	1) Customer-based profit performance[(s.r.)] 2) Customer-based relational performance[(s.r.)]	Positive	125 firms from various industries
Reinartz et al. (2004)	1) CRM process: systematic and proactive management of relationships as they move from beginning (initiation) to end (termination). 2) CRM-compatible organizational alignment: appropriate compensation schemes and organizational structures. 3) CRM technology: information technology that is deployed for the specific purpose of better initiating, maintaining, and/or terminating customer relationships.	Firm performance [(s.r.& a.d.)]	Positive (of CRM initiation, maintenance, termination), nonsignificant (of CRM-compatible organizational alignment), negative (of CRM technology)	211 firms from various industries
Sin et al. (2005)	CRM: CRM is a multi-dimensional construct consisting of four broad behavioral components: key customer focus, CRM organization, knowledge management, and technology-based CRM	1) Marketing performance[(s.r.)] 2) Financial performance[(s.r.)]	Positive	215 financial firms

Table 1 (continued)

Author(s)	Adopted perspective(s) of CRM	Performance variable(s)	Impact of CRM	Sample
Srinivasan and Moorman (2005)	1) Firm CRM system investments: firm's investments in CRM activities and CRM acquisition and retention expenses. 2) Firm CRM capability: an organization-wide system for acquiring, disseminating, and responding to customer information.	Customer satisfaction[s.r.]	Positive	187 online retailers
Voss and Voss (2008)	Customer learning orientation: incorporates customer expectations and preferences into developing and modifying product offerings.	1) Revenue[a.d.] 2) Expenses[a.d.] 3) Net income[a.d.]	Insignificant (on revenue), negative (on expenses, income)	129 theaters
Yim et al. (2004)	CRM implementation: usually involves four specific ongoing activities: a) focusing on key customers, b) organizing around CRM, c) managing knowledge, and d) incorporating CRM-based technology.	1) Customer satisfaction[s.r.] 2) Customer retention[s.r.]	Mixed (depending on CRM implementation dimension and dependent variable)	215 service firms

s.r. self reports; *a.d.* archival data

Indirect performance effect of CRM

Amid these conflicting positions, Zablah et al. (2004) argue that mechanisms through which CRM enhances performance are not well understood, and therefore managers have little guidance on how to focus their CRM efforts. Shugan (2005) asserts that more research is needed to isolate the generative mechanisms through which CRM affects a firm's performance. These reservations demonstrate that the link from CRM to firm performance is unclear and potentially not a direct association.

To date, few studies have considered the possibility that important intervening variables may mediate the relationship between CRM and firm performance, and thus they fail to shed light on the underlying process of performance improvement through CRM (Zablah et al. 2004; Shugan 2005).

As inconclusive findings have emerged from the academic literature regarding the direct effect of CRM on firm performance, it is imperative that researchers more thoroughly inspect the process through which CRM results in higher performance. This study builds on the existing research stream that emphasizes the relevance of business strategy, and has as its first objective to empirically advance our understanding of the relationships between CRM, business strategies, and firm performance. Our specific focus is to analyze whether CRM links directly to firm performance or whether this relationship is mediated by business strategies. In particular, we consider the mediating effects of two main strategic postures of firms: differentiation and cost leadership. Our results show that CRM creates value by enhancing the business strategies of the firm, which in turn drive performance. Thus, we contribute to current knowledge by shedding light on the 'black box' that exists between CRM and firm performance.

Conditional effect of CRM

We also acknowledge that CRM may only create value under specific environmental circumstances (Ryals 2005). While the majority of the literature tends to be silent about how a particular context may interact with CRM to produce differential results, Boulding et al. (2005) state that CRM activities may have a differential effect depending on the context in which they are analyzed. Thus, the second objective of this study is to isolate conditions under which CRM especially influences business strategy. Consistent with this objective, we need to identify certain characteristics that define diverse environments relevant to the effectiveness of CRM. Given the relative infancy of CRM research, our choice of potential moderating variables is large. Prior research has shown that firms successfully compete while using CRM approaches regardless of whether they supply services or goods in the business-to-

consumer or business-to-business arenas (Coviello et al. 2002). Therefore, a fruitful inquiry will go beyond the general classifications of "services/goods" and "business-to-consumer/business-to-business" (Jayachandran et al. 2005).

Recent research indicates that CRM may be key to superior strategic positioning particularly in highly commoditized industries (Matthyssens and Vandenbempt 2008). We consider commoditization to occur when competitors in stable industries offer increasingly homogenous products to price-sensitive customers, who incur relatively low costs in changing suppliers. Researchers have demonstrated that commoditization is not limited to a single industry but rather is a trend occurring in a growing number of diverse industries (Olson and Sharma 2008; Rangan and Bowman 1992; Sharma and Sheth 2004). For this reason, the question of how companies can successfully compete as their environment becomes commoditized has high practical relevance. Hence, we investigate the differential effect of CRM on business strategies across different levels of industry commoditization. This second research objective contributes both to the empirical investigation of the commoditization phenomenon and to a greater understanding of the differential impact of CRM in diverse firm environments.

The remainder of this paper is organized as follows. For clarification, the next section discusses the perspective of CRM that we adopt in this research. Next, we lay out the theoretical background of our study. In the section on "Hypotheses development", we focus on the mediated performance effect of CRM, as well as the moderating effect of different levels of industry commoditization. Subsequently, we present the methodology and the empirical results. Finally, we discuss managerial implications and derive implications for further research.

The concept of CRM

CRM begins with the basic premise that firms view customers as manageable strategic assets of the firm (Rust et al. 2000; Blattberg et al. 2001). Moving beyond this basic concept, the customer-firm relationship has been dissected into stages and firms have attempted to manage and strategize about those relationship stages. In general terms, those stages are (1) customer relationship (re)initiation, (2) customer relationship maintenance (i.e., relationship duration management and customer value enhancement), and (3) customer relationship termination management (e.g., Blattberg et al. 2001; Reinartz et al. 2004; Thomas et al. 2004). Extant literature reflects a consistent belief that firms should systematically engage in and learn from the customer-firm relationships that occur throughout these relationship stages.

Various authors expound on these core ideas, and in doing so, derive varied conceptualizations of CRM and its practice (for a review, see Payne and Frow 2005). For example, customer learning orientation (Voss and Voss 2008), interaction orientation (Ramani and Kumar 2008), customer relationship orientation (Jayachandran et al. 2005), key customer focus (Sin et al. 2005), and customer knowledge process (Jayachandran et al. 2004) are variant terminologies that all relate to the basic premise of the CRM concept—customers are crucial assets that firms should learn from and manage for value. Many of these conceptualizations also accept the perspective that the customer-firm relationship evolves through three stages— initiation, maintenance, and termination.

Given the thematic consistency in the CRM-related research, for the purposes of this study we base our concept of CRM on the dominant and consistent views. More specifically, we assert that firms adopting CRM can be identified by their relational practices (Jayachandran et al. 2005) and view customer relationships as evolving over time (Blattberg et al. 2001). In line with this perspective, we formally define CRM as the firms' practices to systematically manage their customers to maximize value across the relationship lifecycle.

Theoretical background

The conceptual framework of our study is primarily rooted in industrial economics theory and the sources→positions→performance framework. Research in industrial economics suggests two major ways of earning above-average rates of return: differentiation and cost leadership (Porter 1980, 1985). Differentiation entails being unlike or distinct from competitors, e.g., by providing superior information, prices, distribution channels, and prestige to the customer (Porter 1980). Differentiation insulates a business from competitive rivalry, protecting it from competitive forces that reduce margins (Phillips et al. 1983). An alternative strategy, cost leadership, involves the generation of higher margins than competitors by achieving lower manufacturing and distribution costs. Firms pursuing a cost leadership strategy often have highly stable product lines, a relentless substitution of capital for less efficient labor, and a strong emphasis on formal profit and budget controls (Davis and Schul 1993; Miller 1988).

While earlier literature posited an incompatibility of these business strategies and claimed that firms should concentrate on only one strategy at a time to avoid an uncommitted, stuck-in-the-middle position (Porter 1980), more recent evidence suggests that firms can successfully pursue differentiation and cost leadership in parallel (Kotha and Vadlamani 1995). In fact, in many industries, relying

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on only one of the two strategies leaves a business vulnerable to competitors. Thus, Miller and Dess (1993) recommended not to perceive differentiation and cost leadership as "either/or" categories, but to consider both strategies and test for their impact on firm performance. Recent research on this subject has emphasized that both differentiation and cost leadership strategies have a positive impact on performance (Acquaah and Yasai-Ardekani 2008).

Day and Wensley (1988) extend Porter's (1980) work by introducing the sources→positions→performance framework of competitive advantage. Besides acknowledging the performance impact of positional advantages in terms of superior customer value (differentiation) and lower relative costs (cost leadership), this framework embraces elements from the resource-based view by arguing that organizational capabilities are the key sources of positional advantages. CRM is explicitly mentioned as a distinctive organizational capability with the potential of being a major source of a firm's positional advantage (Day 1994, 2004; Day and Van den Bulte 2002). This perception is especially consistent with the perspective adopted in this paper. Our conceptualization of CRM focuses on the practices firms use to systematically manage their customers to maximize value. This view strongly reflects resource-based logic, where capabilities are understood as "discrete practices" (Knott 2003, p. 935) that aim at "the coordinated deployment of assets in a way that helps a firm achieve its goals" (Sanchez et al. 1996, p. 8). Thus, in line with Day (1994, 2004) and Day and Van den Bulte (2002), we posit that CRM can be thought of as an organizational capability. Within the sources→positions→performance framework, CRM—as an organizational capability—has the potential to be a source of advantage, which in turn permits businesses to improve their positioning and ultimately enhance their performance.

Finally, Day and Wensley (1988) argue that sources of positional advantage "are tailored closely to the type of business; the key success factors for machine tools do not apply to college book publishing" (p. 5), suggesting the need to consider industry-related moderating factors when analyzing the link between sources and positions. Therefore, they provide theoretical guidance for our second objective, which is to investigate the differential effect of CRM in different industry environments.

Hypotheses development

Indirect performance effects of CRM

On the basis of the sources→positions→performance framework, we propose a model in which the performance effect of CRM (as a source) is mediated by the business strategies of the firm (as positions), which in turn yield superior firm performance. This perspective is in line with Palmatier et al. (2006) and Sawhney and Zabin (2002), who argue that investigations of CRM's effects on firm performance should consider business strategies. It also concurs with Payne and Frow (2005), who emphasize the need for "a dual focus on the organization's business strategy and its customer strategy" (p. 170).

A major advantage of CRM lies in its potential to help firms understand customer behavior and needs in more detail (Campbell 2003; King and Burgess 2008). By systematically accumulating and processing information across the relationship lifecycle, CRM enables firms to shape appropriate responses to customer behavior and needs and effectively differentiate their offerings (Mithas et al. 2005). In particular, CRM can affect future marketing decisions, such as communication, price, distribution, and brand differentiation (Ramaseshan et al. 2006; Richards and Jones 2008). For example, many hotel chains are able to flexibly manage their room pricing on the basis of customer data collected previously (Nunes and Dréze 2006).

In summary, CRM enables the firm to obtain in-depth information about its customers and then use this knowledge to adapt its offerings to meet the needs of its customers in a better way than does its competition. Therefore, CRM is linked to the business strategy of differentiation, which enables firms to achieve superior outcomes. This link is consistent with the sources→ positions→performance framework, with CRM as the source that allows firms to achieve a differentiated position, which in turn drives firm performance (Day and Wensley 1988). Thus, we offer the following hypothesis:

H1: Differentiation mediates the relationship between CRM and performance.

We also assert that CRM enhances the business strategy of cost leadership. We argue that firms can improve their operations and strive for cost leadership by using CRM information. More specifically, by integrating CRM into the fabric of their operations (Boulding et al. 2005), firms can reduce sales and service costs, increase buyer retention, and lower customer replacement expenditures (Reichheld 1996). This position is based on the notion that CRM increases the length of beneficial customer-firm relationships. Long-term customer relationships have been found to result in lower customer management costs (Reichheld and Sasser 1990), and thus they help improve a firm's cost side. In addition, CRM requires firms to calculate and control customer relationship costs and compare them to the profits each customer produces over its lifetime (Reinartz et al. 2004). By doing

so, firms identify and focus on the profitable customers. In the airline industry, for example, CRM has been reported to result in significant cost reductions by eliminating waste associated with targeting unprofitable customers (Binggelt et al. 2002).

Moreover, it has become increasingly important to translate the customer knowledge gained through CRM into superior production processes, as suggested by prominent operations management concepts such as quality function deployment (QFD) and house of quality (Griffin and Hauser 1993). QFD enables firms to transform customer needs and wants into technical requirements to reduce production costs. Therefore, we posit that CRM has the potential to bring the voice of the customer into the processes of operations and enable firms to link customer desires to production requirements (Cristiano et al. 2000). For example, the Lexus brand continuously contributes a double-digit share to Toyota's total operating profits while representing only marginal, single-digit unit volume. This success results from Lexus's efficiency, which is based on the company's ability to link its manufacturing prowess to a careful customer analysis (Stalk and Webber 1993).

In addition, by using knowledge from customer encounters, firms can also gain advantages in forecasting their demand (Bharadwaj 2000). Moreover, the successful implementation of CRM processes can contribute to greater customer loyalty (Reichheld 1996), which in turn results in lower volatility of demand. Both improved forecasting and lower volatility of demand enhance the firm's ability to plan ahead, and hence, reduces storage costs and improves resource utilization.

In summary, CRM enables a firm to understand its customers better, which is fundamental to deciding which customers to serve and retain as well as to optimizing operations and forecasting demand. Therefore, we posit that CRM indirectly affects firm performance by increasing efficiency and driving down costs, implying that CRM positively affects a firm's cost leadership position, leading to superior firm performance. Thus:

> H2: Cost leadership mediates the relationship between CRM and performance.

Moderating effects of industry commoditization

Current research has also inquired for the contextual reasons why CRM has been frustrating for some firms, and why other firms succeed in their CRM activities (Rogers 2005). Empirical evidence has stressed the importance of moderating effects, indicating that more CRM is not always better (Niraj et al. 2001; Reinartz and Kumar 2000). Boulding et al. (2005) stated that "it is not surprising that CRM activities have a differential effect depending on

the context of where and when they are implemented" (p. 158).

In accordance with these positions, we consider the moderating effect of industry commoditization and conceptualize it as a construct ranging from low to high (Zahra and Covin 1993). Businesses with high industry commoditization sell products whose core offerings are essentially identical in quality and performance to those of their competitors (Narver and Slater 1990). Further, commoditized markets are relatively stable, as products are manufactured to a standard or fixed specification (Hambrick 1983). In addition, rational factors govern purchasing decisions (Robinson et al. 2002), resulting in high price sensitivity and low switching costs for customers (Alajoutsijärvi et al. 2001; Davenport 2005).

Pertaining to the moderating effect of industry commoditization, we posit that CRM has a stronger effect on differentiation at high levels of industry commoditization than at low levels. While differentiation may be possible with high industry commoditization (Levitt 1980), it is generally harder to achieve in those markets. For example, highly homogeneous products leave only marginal room for brand differentiation. High industry stability and thus a low rate of innovation provide fewer opportunities to differentiate in terms of new communication or distribution instruments. To identify the remaining levers of differentiation, firms facing high industry commoditization need to understand their customers' needs at a very detailed level. This thinking is in line with Johnson et al. (2006), who posit that the more homogeneous a product, the more firms must focus on relationships as a source of differentiation. Thus, CRM becomes an even more important source of differentiating a firm and its offerings as commoditization increases.

We find anecdotal support for our position from Alajoutsijärvi et al. (2001). They show that in the paper industry—a highly commoditized market—paper producers that were very sensitive to customers' specific needs were able to provide their customers with a highly customized and differentiated marketing mix. Further, as one of the co-authors of the present paper observed when working with the firm, the industrial gases manufacturer Linde illustrates various ways CRM can help to differentiate particularly in high commodity markets. For example, Linde was recently encouraged by some of its customers to better distinguish between similar lines of products that differ only in their aggregate state. Here, branding was used to set the offering apart from similar competitive offerings. Moreover, CRM also helped Linde to improve its distribution differentiation. Through CRM, Linde gathered valuable information that enabled it to open a new distribution channel, Ecovar Supply System. Learning that several customers strongly appreciate flexible but immediate gas supply, Linde

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designed Ecovar to include a wide range of different on-site gas production systems with sufficient flexibility to adapt to the customer's varying demand. Overall, the information gathered through CRM was a significant driver of Linde's differentiation efforts.

In sum, in commoditized markets, firms such as Linde have little room for differentiation, making their systematic practices to engage with their customers even more important with respect to differentiation strategy. For firms in industries with low commoditization, however, sources of differentiation are much easier to recognize because technological advances occur on a frequent basis and customers are keener to adapt new offerings. Given the abundant opportunities to offer something different, the value of CRM in terms of identifying ways to differentiate should therefore be lower if industry commoditization is low. Thus, we hypothesize:

> H3: The relationship between CRM and differentiation is stronger if industry commoditization is high than if industry commoditization is low.

Finally, we assert that CRM affects cost leadership more at high industry commoditization than at low commoditization. Several factors led us to this assertion. First, on the customer side, high industry commoditization is characterized by low switching cost and a high level of price sensitivity. Both characteristics may result in frequent changes in the customer portfolio of the firm. A major objective of CRM is to achieve and maintain ongoing relationships with customers. Accordingly, customer relationship management efforts can potentially have a significant impact on customer replacement costs in highly commoditized industries. In less commoditized industries, on the other hand, customers face higher switching costs and tend to be less price-sensitive. With a lower threat of customer migration, we expect the positive effect of CRM on customer replacement costs to be more moderate, thus leading to only marginal improvement in the cost leadership position.

Furthermore, with high industry commoditization, production technologies are fairly stable among competitors (Hambrick 1983). Many firms have similar production cost structures (Hill 1988). In their efforts to still identify ways to cut costs further, these firms often strive for increased efficiency in areas such as marketing while trying not to adversely affect customer demand (NAK 2008). Insights derived from CRM initiatives can help in this regard. For example, detailed information pertaining to customers' distribution or communication preferences could lead to lower marketing spending, improving the cost leadership position. In sum, we propose the following:

> H4: The relationship between CRM and cost leadership is stronger if industry commoditization is high than if industry commoditization is low.

Methodology

Field interviews

To obtain a better understanding of the specifics of high and low industry commoditization, we initially conducted six in-depth interviews with marketing executives from a variety of industries (see "Appendix", Table A-1 for participant and firm characteristics). We briefly summarize the main insights gained from these interviews.

John, a marketing officer at a beef production company, alluded to important characteristics of a commoditized market: "We compete on beef with four other direct competitors that have large-scale operations, as we do. This has been the case for the past 12 years. Due to tight food safety regulations, offerings in our industry do not differ much…. Our customers, mainly retailers, look at the price when purchasing." This statement is consistent with the notion that commoditized markets are relatively stable, as products are manufactured to a standard or fixed specification (Hambrick 1983) and purchasing decisions are governed by rational factors (Robinson et al. 2002), resulting in high price sensitivity and low switching costs for customers (Alajoutsijärvi et al. 2001; Burnham et al. 2003; Davenport 2005).

Another interviewee from a high commodity industry, Bill, noted, "In energy supply, the core product is electricity, which comes in standardized configurations"— a characterization reinforced by Thomas, a marketing executive of a global mining company: "You will find that we sell mostly raw materials such as copper, ore, or stones, which are basically identical in core characteristics." These two statements also stress that firms sell highly homogenous products in commoditized markets, which points to product homogeneity as an important facet of industry commoditization.

In contrast to the above characterizations, Dan, the chief executive officer of an underwear manufacturer, presented a different picture of his industry: "Competing offerings in the underwear business differ widely…. Once customers enjoy our product, they tend to repurchase our brand over and over again." Similarly, Stacy, a marketing executive of an office furniture company, told us, "Our products really do stick out from competing companies, which is very important since smaller, flexible furniture makers enter the market." Additionally, Terry, who is leading the marketing efforts of a recognized miniature toy company, said, "We are also maintaining a unique product portfolio, which customers love and pay for, and that is highly different from our main competitor." These three statements suggest that product offerings in these more dynamic markets can vary widely and that customers may be less price-sensitive and less prone to switch suppliers than in highly commoditized industries.

In sum, our field interviews yield insights into significant and important sectoral differences that exist between different levels of industry commoditization.

Questionnaire development and measures

To test our hypotheses, we used a standardized questionnaire as the main data collection instrument. Our questionnaire contained two sections. In the first section, items for CRM, differentiation, cost leadership, industry commoditization, and performance were presented on five-point rating scales (1 = "I fully disagree" and 5 = "I fully agree"). In the second section, we asked for socio-demographic data (gender, position in the company, length of company affiliation in years, and amount of knowledge about the company's strategy). We also asked for company-related data regarding financials, employees, competitors, and customers (annual sales, number of employees, industry affiliation, and share of sales directly to the end consumer).

We used two types of measures in the first section of the survey: reflective and formative measurement models. When indicators (and their variances and covariances) were manifestations of underlying constructs, we used a reflective measurement model (Bagozzi and Baumgartner 1994). In contrast, when a construct was a summary index of its indicators, a formative measurement model was more appropriate (Diamantopoulos and Winklhofer 2001). The above criteria can be applied to both the relationships between the items and the first-order construct, as well as between the first-order dimensions and the second-order factor (Jarvis et al. 2003).

CRM Customer relationship management (CRM) is defined as a firm's practices to systematically manage its customers to maximize value across the relationship lifecycle. In operationalizing CRM, we followed Reinartz et al. (2004) and measured CRM as a second-order construct of type IV: formative first-order, formative second-order (Jarvis et al. 2003). The three first-order dimensions included CRM initiation, CRM maintenance, and CRM termination. We adopted measurement items for each dimension from Reinartz et al. (2004). In its entirety, the CRM measure captured major facets of evaluation and management activities along customer-company relationships, as well as the major subprocesses within those facets.

Differentiation Firms can strive to be unique within their industry in a number of ways (Mintzberg 1988; Wirtz et al. 2007). "Ideally, the firm differentiates itself along several dimensions" (Porter 1980, p. 37). On the basis of the extant literature, we identified four important dimensions of differentiation: communication differentiation (Boulding et al. 1994; Hill 1990), price differentiation (Hooley and Greenley 2005), distribution differentiation (Costanzo et al. 2003), and brand differentiation (Chaudhuri and Holbrook 2001; Smith and Park 1992; Wirtz et al. 2007).

Hill (1990) suggests that communication is integral to differentiation. More specifically, he asserts that effective marketing communications are required to relay the message that the firm is different from, and better than, competitors. Thus, communication differentiation can be defined as advertising and promotion in a unique way. Price differentiation refers to selling products at higher or lower prices than competitors (Hooley and Greenley 2005). Distribution differentiation requires using mechanisms of distribution different from those of competitors (Costanzo et al. 2003). Finally, brand differentiation involves efforts aimed at making a brand unique from competitors' brands. Building a strong unique brand can provide differentiation in the minds of consumers, and thus may add value to the product offerings (Forsyth et al. 2000; Wirtz et al. 2007). Therefore, many firms seek to achieve differentiation by branding their products (McQuiston 2004).

To measure differentiation, we constructed a second-order construct of type II: reflective first-order, formative second-order (Jarvis et al. 2003). Each of the first-order dimensions was measured using multiple indicators adapted from existing scales. Measures for communication and price differentiation were based on Kotha and Vadlamani (1995) and Nayyar (1993), while distribution differentiation was measured according to Bienstock et al. (1997). Measures for brand differentiation were adapted from Chaudhuri and Holbrook (2001) and Davis and Schul (1993).

Cost leadership The cost leadership business strategy aims at achieving low manufacturing and distribution costs (Narver and Slater 1990; Nayyar 1993; Porter 1980). We based our reflective measure of cost leadership on Narver and Slater (1990) and Nayyar (1993).

Performance We followed the lead of Vorhies and Morgan (2005) as well as Schilke et al. (in press) in measuring firm performance as a three-dimensional, second-order construct of type I: reflective first-order, reflective second-order (Jarvis et al. 2003). The first-order dimensions were profitability (degree of financial performance), customer satisfaction (degree of customer-oriented success), and market effectiveness (degree to which the firm's market-based goals had been achieved). Such a multidimensional conceptualization of performance incorporating both quantitative and qualitative aspects has been extensively applied in strategy research (e.g., Dvir et al. 1993; Venkatraman

1989) and recommended repeatedly to capture the complex nature of the phenomenon (Bhargava et al. 1994; Katsikeas et al. 2000). Each of the three dimensions (profitability, customer satisfaction, and market effectiveness) was measured using four items based on Vorhies and Morgan (2005).

Industry commoditization The literature mentions four distinct aspects as characterizing high industry commoditization, which we include in our research to measure industry commoditization. The first aspect is low switching costs as a combination of buyers' economic risk, evaluation, learning, set-up, and loss costs (Burnham et al. 2003). The second is high price sensitivity, as buyers in highly commoditized industries are looking for the best price for a standard product on the assumption that products with essentially equivalent quality and features will continue to be available (Alajoutsijärvi et al. 2001; Davenport 2005). The third characteristic is high product homogeneity, as customers perceive products in highly commoditized markets to be interchangeable (Bakos 1997; Greenstein 2004; Pelham 1997; Robinson et al. 2002), and the fourth is high industry stability, which includes predictable market demand and few product- and technology-related changes (Day and Wensley 1983; Pelham 1997).

We developed multi-item scales to measure the four first-order dimensions of the type II industry commoditization construct (reflective first-order, formative second-order). For the switching costs construct, we created an item pool based on Burnham et al. (2003). We based the items for price sensitivity on Lichtenstein et al. (1988), while the items for the product homogeneity construct were based on Sheth (1985) and Hill (1990). Finally, we based the items for the industry stability construct on the indicators used by Achrol and Stern (1988) and Gilley and Rasheed (2000).

A list of all items is provided in the "Appendix" (Table A-2).

Data collection

Sampling procedure The sampling frame consisted of 2,045 U.S.-based business units, identified through a commercial database. At these business units, key informants (chief executive officer, vice president of marketing, vice president of sales, marketing director, or sales director) were asked to participate in our study and were provided with the questionnaire. Firms were affiliated with one of the following ten industries: energy supply, mining, forestry and logging, agriculture and hunting, pharmaceuticals, underwear, outerwear, wearing apparel and accessories, furniture, and toys. We chose these industries to capture a variety of firms ranging from high to low industry

commoditization (we elaborate on this in our data analysis). A total of 318 usable responses were returned, representing a response rate of 16%.

Respondent characteristics Of the 318 respondents, the majority (57.5%) were male managers. The average respondent had a company affiliation of 9.2 years and a self-reported high to very high knowledge of the company's strategy.

Company characteristics The average company had an annual sales revenue of between USD 50 and 100 million and had between 500 and 1,000 employees. In 41.9% of the firms, 50% or less of total sales were direct to the end consumer. In 58.1% of the firms, the proportion of direct sales to the end consumer was 51% or more.

Nonresponse bias According to the recommendations of Armstrong and Overton (1977), we assessed a nonresponse bias by comparing early and late respondents. The t-tests of the group means revealed no significant differences. Moreover, we examined whether the firms we initially addressed differed from the responding firms in terms of size (approximated by the number of employees) and industry segment. We found no significant differences.

Common method bias When data on two or more constructs are collected from the same person and correlations between these constructs need to be interpreted, common method bias may be present (Podsakoff and Organ 1986). We took several steps to address this issue. First, we arranged the measurement scales in the questionnaire so the measures of the dependent variable followed, rather than preceded, those of the independent variables (Salancik and Pfeffer 1977). Second, we employed Harman's one-factor test, in which no single, general factor was extracted (Podsakoff and Organ 1986). Third, we re-estimated our structural model with all the indicator variables loading on an unmeasured latent method factor (MacKenzie et al. 1993).[1] No individual path coefficient corresponding to the relationships between the indicators and the method factor was significant. Moreover, the overall pattern of significant relationships was not affected by common method variance (i.e., all of the paths that were significant when the common method variance was not controlled remained significant when common method variance was controlled).

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[1] For identification purposes, it was necessary to constrain factor loadings within constructs to be equal when estimating this model.

Estimation approach

We tested our hypotheses by applying the covariance-based structural equation modeling software AMOS 16.0 and using the maximum likelihood (ML) procedure. To assess reliability and validity of our multi-item constructs, we ran confirmatory factor analysis for each construct individually using AMOS 16.0 for reflective constructs and partial least squares (PLS, specifically PLS-Graph 3.0) for formative constructs. PLS, a variance-based structural equation modeling approach, provided the means for directly estimating the component scores and avoiding the parameter identification problems that can occur with formative measurement models under covariance-based analysis (Bollen 1989; Chin and Newsted 1999). In the PLS analysis, second-order factors were approximated using the hierarchical component model (Lohmöller 1989; Wetzels et al. 2009; Wold 1980).

Results

Measure assessment

For each reflective first-order construct, item reliability was analyzed by examining the squared factor loadings. As a general guideline, item reliability should exceed .4 (Bagozzi and Baumgartner 1994), which corresponds with factor loadings being greater than .63. Composite reliability (CR) and average variance extracted (AVE) were analyzed to test construct reliability and validity. Bagozzi and Yi (1988) recommend threshold values of .7 for CR and .5 for AVE. Finally, Cronbach's alpha was examined for each construct. Nunnally (1978) recommends a threshold alpha value of .7. For our measures, factor loadings, CR, AVE, and Cronbach's alpha were indicative of good psychometric properties ("Appendix", Table A-2). Together with content validity established by expert agreement, these results provide empirical evidence for construct validity. We then assessed discriminant validity on the basis of the criterion that Fornell and Larcker (1981) propose. The results indicate no problems with respect to discriminant validity (Table 2).

Formative constructs require a different assessment approach. Following the recommendations of Diamantopoulos and Winklhofer (2001), we evaluated indicator collinearity and external validity for the three CRM factors. The variance inflation factors ranged from 2.14 to 2.80 for CRM initiation, from 1.99 to 3.03 for CRM maintenance, and from 2.06 to 2.48 for CRM termination. Thus, all variance inflation factors were below the common cut-off value of 10 (Kleinbaum et al. 1988). To assess the external

validity of the three CRM dimensions, we correlated the formative items with another, conceptually related variable external to the index (Diamantopoulos and Winklhofer 2001). More specifically, since we expected our three CRM dimensions to be related to customer relationship orientation, each indicator of the three CRM factors was correlated with the statement, "Our organization has a strong orientation towards customer relationships." All of the CRM indicators were significantly correlated with this statement ($p<.05$), suggesting satisfactory external validity of the CRM measures.

Subsequently, we examined the loadings of the three dimensions on the second-order factor CRM using PLS analysis. The results provided support for the proposed conceptualization of CRM as a formative second-order construct. The path coefficients were positive (.42, .52, .08) and significant ($p<.01$). In addition, all weights of the indicators measuring the formative first-order constructs turned out to be positive and, except in the case of three of the 39 indicators, significant ($p<.05$). After careful inspection of the three indicators, we dropped them from further analyses.

Similar steps were taken to further assess the formative second-order constructs differentiation and industry commoditization (whose reflective first-order dimensions were previously evaluated in AMOS). In the PLS analysis, all four differentiation dimensions had positive (.28, .23, .24, .42) and significant ($p<.01$) paths on the second-order factor of differentiation. Likewise, the paths between the four commoditization dimensions and the second-order factor were positive (.32, .28, .30, .32) and significant ($p<.01$). For the purpose of subsequent hypothesis testing in AMOS, we computed factor scores for the three formative second-order constructs (CRM, differentiation, and industry commoditization) by weighted multiplication of the individual indicators with the standardized PLS estimates (Reinartz et al. 2004).[2]

Structural model

After establishing confidence in the appropriateness of the measures, we examined the structural model. Figure 1

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[2] In order to avoid underidentification of the AMOS model, we adopted common practice and fixed the factor scores' error variances to zero (Fuchs and Diamantopoulos 2009; Kenny et al. 1998). Following the suggestion by Kline (2005), we reestimated our structural model with a range of values for the measurement error variance. Using the error variance formula suggested by Jöreskog and Sörbom (1988)—i.e., $\theta_1 = VAR(x_1) \times (1\text{-assumed reliability of } x_1)$—we reestimated the model shown in Fig. 1 with assumed reliabilities of .7, .8, and .9. The structural estimates remained significant in all cases, showing that they are not substantially affected by the level of measurement error in the factor scores that is assumed.

Table 2 Correlations and discriminant validity

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Switching costs	**.50**														
2	Price sensitivity	.20	**.50**													
3	Product homogeneity	.34	.26	**.48**												
4	Industry stability	.36	.18	.37	**.50**											
5	CRM initiation	.12	.15	.16	.12	—										
6	CRM maintenance	.11	.13	.12	.11	.77	—									
7	CRM termination	.11	.14	.18	.21	.44	.39	—								
8	Communication differentiation	.20	.21	.21	.18	.38	.39	.16	**.59**							
9	Price differentiation	.19	.19	.22	.20	.34	.30	.33	.33	**.50**						
10	Distribution differentiation	.21	.20	.17	.15	.40	.39	.16	.45	.28	**.48**					
11	Brand differentiation	.18	.18	.16	.17	.39	.39	.21	.50	.38	.39	**.50**				
12	Cost leadership	.08	.10	.10	.09	.34	.40	.15	.27	.12	.27	.26	**.50**			
13	Customer satisfaction	.12	.15	.08	.09	.36	.44	.12	.35	.28	.33	.33	.31	**.58**		
14	Market effectiveness	.13	.14	.15	.21	.36	.35	.25	.29	.30	.28	.29	.20	.50	**.61**	
15	Profitability	.10	.11	.14	.19	.37	.35	.24	.31	.33	.28	.25	.19	.40	.60	**.69**

AVE not available for formative constructs

Bold numbers on the diagonal show the AVE, *numbers* below the diagonal the squared correlations

presents our structural model and the estimates obtained from AMOS.

The fit measures for the structural model showed satisfactory values (χ^2=420.63; df=147; χ^2/df=2.86; CFI=.93; NFI=.90; TLI=.92; SRMR=.05). The path coefficients indicated that we found overall support for the proposed model. The relationship between CRM and the two business strategies was confirmed in this study; that is, CRM predicted differentiation (β=.74; p<.01) and cost leadership (β=.75; p<.01). The results also provide strong support for the effects of differentiation (β=.41; p<.01) and cost leadership (β=.52; p<.01) on performance. Finally, the R^2 value of the performance variable (68%) indicated that the model highlights important factors associated with the success of firms.

A supplementary test for mediation assessed the significance of the two indirect effects, CRM→differentiation→performance and CRM→cost leadership→performance (MacKinnon et al. 2002). Estimating a single model that included both the hypothesized indirect paths and the direct path (CRM→performance), we find that the indirect associations are significant (indirect effect via differentiation: $\beta_{indirect}$=.27; p<.01; indirect effect via cost leadership $\beta_{indirect}$=.33; p<.01),[3] while the direct association is

insignificant (β_{direct}=.12; p>.1). Thus, differentiation and cost leadership fully mediate the link between CRM and performance, supporting H1 and H2.

To test hypotheses H3 and H4, we applied covariance-based multiple group structural equation modeling (for a review, see Qureshi and Compeau 2009), conducting separate analyses for the low and high commodity markets. Based on a thorough review of the literature, some industries were previously identified as examples of low and high commodity environments (e.g., Hambrick 1983; Narver and Slater 1990; Stanton and Herbst 2005). We used this precedence to assign firms to two subgroups. The low commodity subgroup (n_1=218) included firms from pharmaceuticals, underwear, outerwear, wearing apparel and accessories, furniture, and toys. The high commodity subgroup (n_2=100) was composed of energy supply, mining, forestry and logging, and agriculture and hunting. To confirm the appropriateness of the assignment of firms to the two subgroups, a t-test was performed, with industry commoditization as the differentiating factor. This test confirmed a significantly lower level of industry commoditization for the low versus high industry commoditization subgroup (df=316; p<.01).

The results for the structural model from two different subsamples, one from low and the other from high industry commoditization, appear in Fig. 2. We initially tested for measurement invariance by equating the factor loadings in the two groups (Steenkamp and Baumgartner 1998). Examining the effect of this constraint, we found

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[3] To obtain the standard errors for the indirect effects, we used the Sobel (1982) method.
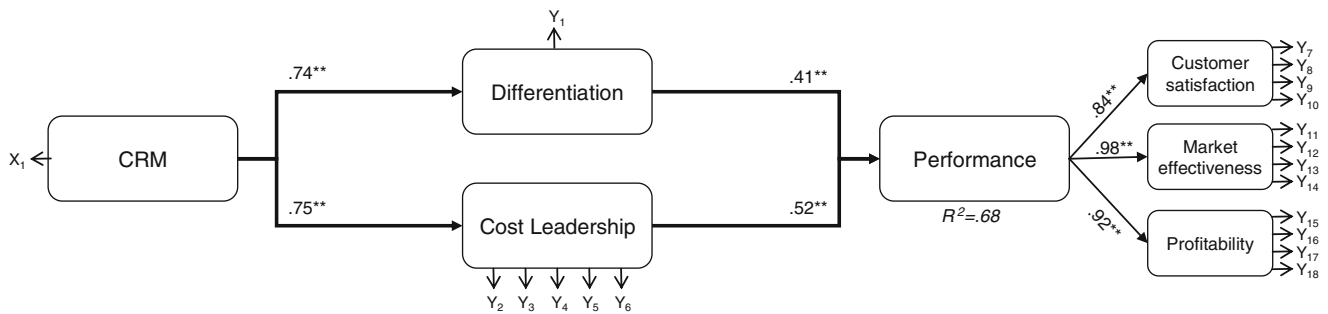
Notes: *p < .05, **p < .01.
 X₁ and Y₁ represent factor scores obtained through PLS.

Figure 1 Results for the structural model of CRM, differentiation, cost leadership, and performance.

that it did not lead to a significant decrease in model fit ($\Delta\chi^2=19.95$; $\Delta df=13$; $p>.05$), which supports measurement equivalence. Subsequently, we compared the structural path estimates for the low and high commodity subsamples.

Comparison of low and high commodity industries In line with H3, CRM's impact on differentiation was significantly greater in high commodity industries ($\beta=.81$, $p<.01$) than in low commodity industries ($\beta=.70$, $p<.01$); equating this path in the two submodels led to a significant decrease in model fit ($\Delta\chi^2=4.99$; $\Delta df=1$; $p<.05$). However, the impact of CRM on cost leadership remained virtually unchanged (resulting in no support for H4); constraining the model in a way that the path from CRM to cost leadership was equal did not produce a significant change in the fit statistics ($\Delta\chi^2=.05$; $\Delta df=1$; $p>.1$).[4] The paths from differentiation to performance and from cost leadership to performance were positive and significant ($p<.01$) in both subsamples, without significant differences ($p>.05$) between the two groups.

While not at the center of our research interest, we also tested for differences between low and high commodity industries in terms of the total indirect effects CRM→differentiation→performance and CRM→cost leadership→performance, applying MacKinnon's (2000) procedures to contrasting indirect effects. That is, we calculated estimates and standard deviations for the indirect paths for the low and high commodity subgroups and performed Smith-Satterthwaite tests to assess statistical significance of the difference between the indirect effects in low versus

high commodity industries. For the indirect effect CRM→differentiation→performance, the t-value based on the Smith-Satterthwaite test is 1.40, and for the indirect effect CRM→cost leadership→performance, the t-value is 1.02. Thus, both indirect effects are not statistically different between the low and high commodity subgroups ($p>.05$).

Discussion

For nearly three decades, the ideas of Porter (1980, 1985) have been highly influential to our understanding of the way in which firms compete. Particularly, the concepts of differentiation and cost leadership have had an immense impact on business practice and research (Acquaah and Yasai-Ardekani 2008). Porter and others (e.g., Kotha and Vadlamani 1995; Miller and Dess 1993) assert, and empirical evidence supports, that differentiation and cost leadership are fundamental to business strategy and that these focuses can be linked to business success.

Virtually detached from the Porter tradition, a different camp of CRM advocates has recently emerged. Proponents of CRM are arguing that CRM is a new marketing paradigm and is evolving as part of marketing's new dominant logic. Yet, one major problem stands in their way. Anecdotal evidence from business practices does not fully support a strong link between CRM and business performance. In addition, research analyzing the effect of CRM on performance has produced inconclusive results. Some investigators contend that, without prompt attention to its performance impact and conceptual anchoring, CRM could become abandoned and perhaps experience a premature death (Fournier et al. 1998).

This is the backdrop in which this study attempts to make a contribution and provide clarity. To address this issue, we focused on embedding CRM within the business strategy of the organization. In doing so, we heeded prior calls for research integrating CRM with organizational

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[4] Because our analysis of moderating effects with multi-group analysis was based on the dichotomization of the moderator variable, it may be associated with a reduced level of statistical power (Irwin and McClelland 2001), which could also serve as an explanation for why we do not find support for H4.
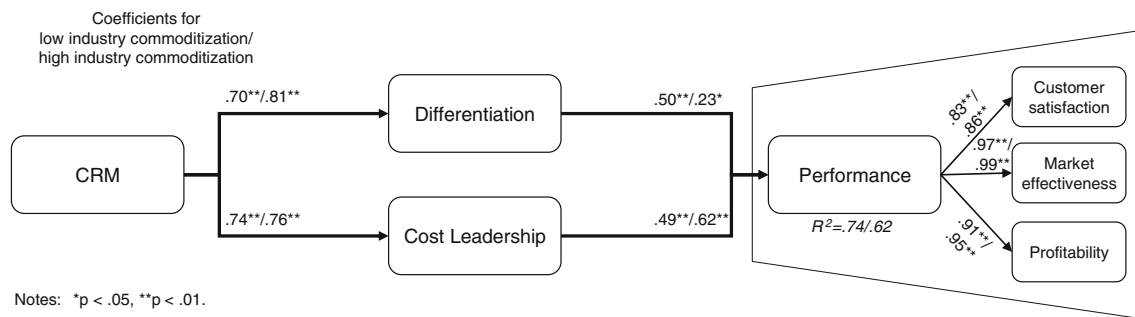
338

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Figure 2 Results for low and high industry commoditization.

strategy (Sawhney and Zabin 2002) and examining fundamental mechanisms through which CRM affects firm performance (Shugan 2005; Zablah et al. 2004). In taking this approach, we tackle two important questions: (1) What is the role of CRM for business strategy and firm performance? and (2) Does industry commoditization affect the impact of CRM?

What is the role of CRM for business strategy and firm performance?

The inconclusive findings of prior research present a conundrum with respect to the importance and effect of CRM. On the basis of the conceptual model tested and supported in this study, we argue that an explanation for the role of CRM lies in the sources→positions→performance framework, which asserts that organizational capabilities are the sources of strategic positions, which in turn improve firm performance (Day and Wensley 1988). From this perspective, CRM represents a critical capability of the firm used to enhance its strategic position in the market. With this enhanced position, improved performance outcomes are achieved. In line with Day and Wensley (1988), the specific strategic positions investigated in this study include differentiation and cost leadership. Thus, the sources→positions→performance framework helps to advance our theoretical understanding of how CRM is linked to business strategies and of the process by which CRM contributes to an organization's success.

Supporting this theory, the critical insight we glean from our empirical results is that the CRM-performance link is fully mediated by the strategies of differentiation and cost leadership. In other words, the link between CRM and firm performance is not direct, but rather indirect. On the basis of this finding, we conclude that prior CRM research was not incorrect, but rather was incomplete in that it focused exclusively on the direct effect of CRM. By adopting a mediational structure in this study, we isolate the specific processes by which CRM links to firm performance. To the

best of our knowledge, this is the first empirical study to investigate critical mediators in the CRM-performance link as well as to examine CRM in the context of business strategies.

Does industry commoditization affect the impact of CRM?

As the commoditization phenomenon grows more extensive (Olson and Sharma 2008; Rangan and Bowman 1992; Sharma and Sheth 2004), understanding performance drivers in the high commoditization environment and whether these drivers differ from those in less commoditized industries becomes increasingly important. From this research, we learn that industry commoditization may significantly affect the extent to which CRM enhances performance-improving strategies. The caveat is that the moderating influence of commoditization depends on the business strategy being analyzed. We arrive at this caveat because we find support for H3 (i.e., the relationship between CRM and differentiation is stronger if industry commoditization is high than if industry commoditization is low), but did not find support for H4 which hypothesized a stronger association between CRM and cost leadership in higher versus lower commodity environments.

The lack of support for H4 was unexpected because we deduced that the threat of customer migration was relatively lower in less commoditized industries because of characteristics that are typical of those environments (e.g., higher switching costs and less price sensitivity). Therefore, we expected the positive effect of CRM on customer replacement costs to be more moderate in low commodity markets. In other words, the impact of CRM on costs improvements would be larger in an environment where customer migration is a bigger concern. However, counter to our rationale, the results suggest that CRM has an equivalently strong effect on cost leadership regardless of the degree of industry commoditization. This result could lead one to wonder whether customer migration costs are key to a cost leadership position in the context of our study. It could be

that CRM helps to improve a firm's cost position primarily through its strong focus on profitable customers—a mechanism that is likely to be effective across different levels of industry commoditization. This could explain the similar effect of CRM on cost leadership in low and high commodity environments. The data in this research are unfortunately not appropriate for exploring the mechanisms through which CRM enhances cost leadership at a detailed level. Future research aimed at identifying the processes mediating the CRM-cost leadership link is needed.

In contrast to the association to cost leadership, CRM does have a differential impact on a firm's differentiation strategy, depending on the degree of industry commoditization. More specifically, CRM can improve the differentiation position of a firm in a highly commoditized industry more than that of a firm in a less commoditized industry. This result seems logical because in highly commoditized industries, customers tend to have more experience with the product offerings. Therefore, it is reasonable that success in differentiation would hinge on a deeper understanding of the customer's needs and wants. The marginal impact of added consumer insights would seem to be greater under these circumstances. Thus, on one level our findings are significant because they show that differentiation can be achieved and affect firm performance in both high and low commodity environments. Moreover, CRM's marginal impact on differentiation is greater when industry commoditization is high. Perhaps this result is due to the higher level of market stability in highly commoditized industries. In other words, it is easier to attribute the effect of small changes or enhancements to strategic positions in more stable markets than in more dynamic markets.

CRM in practice

In light of our results regarding how CRM links to business strategies and performance, the remaining question is why some managers are finding mixed results with respect to the impact of CRM. This research offers an explanation for this issue and suggests three specific managerial recommendations.

First, as confirmed by our field interviews, managers often view CRM as a marketing initiative separate from their overall business strategy. Separate systems (customer database systems), teams (e.g., consumer insight groups, loyalty groups), and even budgets are allocated toward CRM efforts. These CRM systems, teams, and budgets often operate in parallel and are distinct from business development departments, brand/product groups,

and advertising/promotion teams, as well as from procurement and operations units. The ability of CRM to guide or enhance aspects of differentiation and cost leadership initiatives is more limited. Organizational units under the CRM umbrella are often charged with efficient customer acquisition, customer retention and loyalty programs, and customer termination and reacquisition tasks. While all of these roles are important, this research suggests that merit lies in *focusing* these efforts on the fundamental business strategies of differentiation and cost leadership. Because of the indirect link between CRM and performance, the effect of CRM may be minimal if customer insights and implementation of CRM are not aimed at the fundamental strategies that link directly to firm performance. This lack of focus could explain the mixed effectiveness of CRM as frequently reported in business practice. To be clear, CRM should not replace foundational business strategies, but rather be used to improve them. Thus, this research does not merely advocate for CRM; it provides guidance for how to focus CRM efforts.

Our second recommendation follows from our first. Specifically, our findings make an important statement to practicing managers and senior executives regarding organizational alignment. More specifically, the findings suggest increased collaboration between CRM teams and other strategy-, brand-, advertising-, and operations-oriented groups in the organization. A CRM team, or even a consumer insight group, should be integrated into other organizational units. This recommendation differs significantly from those of the earlier CRM proponents, who argued for distinct acquisition and retention units (e.g., Blattberg et al. 2001). Embedding "CRM experts" into departments that derive and execute the core strategies of the firm will allow for the CRM insights to better inform the firm's basic strategic positions.

These first two recommendations apply to firms in both low and high commodity industries. Our third recommendation offers specific guidance to managers in highly commoditized industries. While our results indicate that in these industries success in differentiation is enhanced by a deeper understanding of the customer's needs and wants, managers paradoxically do not always act on this notion. Highly commoditized industries tend to resort to cost competition (Sheth 1985) and, according to our in-depth interviews, firms do not typically embrace CRM initiatives. For example, a manager from the electricity industry stated that his CRM department consists of a single person, and little is done to derive consumer insights.

Counter to common practice in high commodity industries, we recommend that firms in these specific industries

re-examine how they view and approach differentiation and the amount of resources they devote to CRM. Because our research reveals several facets of differentiation (namely communication, pricing, distribution, and branding) that can be significantly improved through insights derived from CRM, this re-examination should pay particular attention to these specific key aspects of a firm's differentiation strategy. For example, extending its focus beyond product specifications and current standards to include the customer and its potential value could lead a firm to alter its distribution pattern or frequency to better satisfy a customer. A highly commoditized firm may also look for innovative ways to communicate and engage with its customers. For example, given that online interactions are becoming more common, firms might be able to use insights derived from their CRM efforts to differentiate themselves based on how they uniquely employ e-mail marketing or social media, or through the design and functionality of their web page. Thus, the essence of this recommendation is that firms that compete in highly commoditized industries reevaluate their existing practices and insure that they rely on CRM to find ways for effective differentiation.

It is important to note that although this recommendation is specific to firms in highly commoditized industries, we are not suggesting that firms in lower commoditized industries should utilize CRM to a lesser extent. To be clear, our results simply suggest that the way CRM helps to enhance business strategies differs across various levels of commoditization, with CRM having a stronger effect on differentiation in high than in low commodity environments.

Limitations and avenues for further research

Although this study provides unique insights into underlying mechanisms of the CRM-performance link, we acknowledge some limitations. First, our chosen set of factors to research is not exhaustive of possible constructs. The model proposed here is a first step toward an integrated strategic framework incorporating the concept of CRM, whose performance impact was mediated by two strategic postures of firms, differentiation and cost leadership. Future research could examine other variables that may also play an important role in the CRM-performance link. For example, relational trust could be such an additional moderator, as CRM may enhance customers' trust in a firm, which in turn lessens their propensity to switch (Saparito et al. 2004). Furthermore, considering additional facets of differentiation, such as value-added services (Reinartz and Ulaga 2008), may help explain why some firms gain a competitive advantage

after their industry starts to become commoditized. Second, this study was limited to manufacturing industries. Analyzing the commoditization of service industries might yield interesting findings on how to differentiate intangible products, achieve a cost leadership position, and design effective CRM. Especially in commoditized service industries, incorporating customer insights might help to differentiate meaningfully and to cut cost in the right places (Reimann et al. 2008). A third limitation of this study relates to its empirical design. While the results indicate that CRM enhances business strategy and in turn affects firm performance, inferences to causality must be limited given the cross-sectional nature of the data. Therefore, future research should examine the performance impact of CRM longitudinally.

Conclusion

The purpose of this study was to examine the relationship between CRM and firm performance in light of the mediating impact of business strategy and the moderating role of the industry environment. Our results underscore the need to move beyond a focus on the direct link between CRM and performance in seeking to understand the mechanisms and conditions that influence how and when CRM affects firm success. Guided by the sources→positions→performance framework, our results support the position that the business strategies of differentiation and cost leadership fully mediate the performance effect of CRM. That is, while CRM did not affect performance outcomes directly, its indirect effects through the two business strategies are significant. In addition, we identified industry commoditization as an important moderator of the relationship between CRM and differentiation in such a way that the CRM-differentiation relationship strengthened at high levels of industry commoditization and weakened at low levels. We hope our research will inform future investigations that contribute to the understanding of the role of CRM.

Appendix

Table A-1 Field interviews

Name	Participant characteristics	Firm characteristics
Bill	Marketing manager; age: 42; 4.5 years in marketing	Supplier of electricity; sales: $1.5 billion employees: 2,200
Thomas	Marketing executive; age: 38; 12 years in different functions	Mining of metals and stones; sales: $39.5 billion; employees: 38,000
John	Chief marketing officer; age: 50; 21 years in marketing and sales	Beef production and processing; sales: $28 billion; employees: 11,400
Dan	Chief executive officer; age: 62; 30 years in marketing and sales	Underwear; sales: $54 million; employees: 450
Stacy	Marketing executive; age: 38; 11 years in marketing	Office furniture; sales: $840 million; employees: 4,600
Terry	Marketing executive; age: 44; 7 years in marketing	Miniature toy trains; sales: $206 million; employees: 1,460

Names are pseudonyms. All participants are key decision makers in their firm. Our sample consists of manufacturers from a variety of industries with different levels of commoditization. Interviews lasted between 1 and 2 h. Interviews were divided into two parts: (1) Managers were asked to describe their industry and competitive environment and (2) were invited to comment on their firm's CRM and strategic positioning.

Table A-2 Scale items for construct measurement

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Industry commoditization							
To what extent do you agree with the following statements?							
Switching costs (*reflective*)	In our industry, customers' costs for switching to another supplier (switching cost) are low.	3.52	.94	.75	.80	.50	.80
	In our industry, applying another supplier's product would be easy for the customer.	3.58	.90	.69			
	In our industry, the process of switching to a new supplier is quick and easy for the customer.	3.54	.91	.68			
	In our industry, switching to a new supplier does not bear risk for the customer.	3.53	.93	.68			
Price sensitivity (*reflective*)	In our industry, customers buy the lowest priced products that will suit their needs.	3.58	.89	.64	.75	.50	.75
	In our industry, customers rely heavily on price when it comes to choosing a product.	3.66	.82	.82			
	In our industry, customers check prices even for low-value products.	3.68	.85	.67			
Product homogeneity (*reflective*)	In our industry, most products have no intrinsic differences from competing offerings.	3.46	.97	.69	.73	.48	.73
	In our industry, there are little differences in technology and markets.	3.45	.97	.63			
	In our industry, many products are identical in quality and performance.	3.57	.94	.76			
Industry stability (*reflective*)	In our industry, there are no frequent changes in customer preferences.	3.51	.92	.75	.79	.50	.80
	In our industry, there are no frequent changes in the product mix of suppliers.	3.54	.87	.72			
	In our industry, technology changes are slow and predictable.	3.44	.95	.64			
	In our industry, product obsolescence is slow.	3.39	.93	.69			
CRM							
To what extent do you agree with the following statements?							
CRM initiation (*formative*)	We have a formal system for identifying potential customers.	3.79	.83	.11	N/A	N/A	N/A
	We have a formal system for identifying which of the potential customers are more valuable.	3.75	.87	.11			
	We use data from external sources for identifying potential high value customers.	3.74	.87	.08			
	We have a formal system in place that facilitates the continuous evaluation of prospects.	3.70	.85	.11			
	We have a system in place to determine the cost of reestablishing a relationship with a lost customer.	3.66	.92	.10			

Table A-2 (continued)

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
	We have a systematic process for assessing the value of past customers with whom we no longer have a relationship.	3.69	.90	.06			
	We have a system for determining the costs of reestablishing a relationship with inactive customers.	3.66	.94	.07			
	We made attempts to attract prospects in order to coordinate messages across media channels.	3.77	.82	.14			
	We have a formal system in place that differentiates targeting of our communications based on the prospect's value.	3.76	.86	.08			
	We systematically present different offers to prospects based on the prospects' economic value.	3.73	.89	.07			
	We differentiate our acquisition investments based on customer value.	3.72	.83	.05			
	We have a systematic process/approach to reestablish relationships with valuable customers who have been lost to competitors.*						
	We have a system in place to be able to interact with lost customers.	3.71	.92	.12			
	We have a systematic process for reestablishing a relationship with valued inactive customers.	3.70	.88	.09			
	We develop a system for interacting with inactive customers.	3.68	.93	.12			
CRM maintenance (*formative*)	We have a formal system for determining which of our current customers are of the highest value.	3.73	.81	.08	N/A	N/A	N/A
	We continuously track customer information in order to assess customer value.	3.78	.84	.04			
	We actively attempt to determine the costs of retaining customers.	3.74	.87	.11			
	We track the status of the relationship during the entire customer life cycle (relationship maturity).	3.76	.82	.04			
	We maintain an interactive two-way communication with our customers.	3.81	.83	.04			
	We actively stress customer loyalty or retention programs.	3.81	.86	.05			
	We integrate customer information across customer contact points (e.g., mail, telephone, Web, fax, face-to-face).*						
	We are structured to optimally respond to groups of customers with different values.	3.76	.83	.06			
	We systematically attempt to customize products/services based on the value of the customer.	3.76	.82	.10			
	We systematically attempt to manage the expectations of high value customers.	3.83	.77	.03			
	We attempt to build long-term relationships with our high-value customers.	3.96	.77	.04			
	We have formalized procedures for cross-selling to valuable customers.	3.71	.82	.03			
	We have formalized procedures for up-selling to valuable customers.	3.77	.85	.10			
	We try to systematically extend our "share of customer" with high-value customers.	3.76	.80	.04			
	We have systematic approaches to mature relationships with high-value customers in order to be able to cross-sell or up-sell earlier.	3.71	.87	.13			
	We provide individualized incentives for valuable customers if they intensify their business with us.	3.75	.84	.05			
	We systematically track referrals.	3.73	.90	.13			
	We try to actively manage the customer referral process.	3.72	.87	.09			
	We provide current customers with incentives for acquiring new potential customers.	3.75	.94	.10			
	We offer different incentives for referral generation based on the value of acquired customers.	3.76	.89	.08			
CRM termination (*formative*)	We have a formal system for identifying non-profitable or lower-value customers.	3.62	.54	.71	N/A	N/A	N/A
	We have a formal policy or procedure for actively discontinuing relationships with low-value or problem customers (e.g., canceling customer accounts).	3.52	1.04	.25			
	We try to passively discontinue relationships with low-value or problem customers (e.g., raising basic service fees).	3.47	1.01	.16			
	We offer disincentives to low-value customers for terminating their relationships (e.g., offering poorer service).*						

Differentiation

Comparing your business with your major competitors, to what extent do you agree with the following statements?

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Communication differentiation (*reflective*)	We make greater efforts than our competitors to enhance the quality of our sales promotion.	3.74	.78	.69	.80	.59	.79
	We make use of innovative promotional methods.	3.75	.86	.90			
	Our promotional activities aim at emphasizing our distinctiveness from competition.	3.76	.82	.67			

Table A-2 (continued)

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Price differentiation (*reflective*)	Our pricing strategy targets segments that are different from our competitors.	3.61	.87	.79	.74	.50	.70
	Our customers view our pricing as distinct from our competition.	3.61	.84	.71			
	Our products target high-priced segments.	3.58	.87	.58			
Distribution differentiation (*reflective*)	We are highly selective in our choice of channel supply partners.	3.86	.88	.59	.72	.48	.71
	Compared to our competition, our approach to distribution is more selective.	3.67	.96	.83			
	We pursue a differentiation strategy by place.	3.73	.92	.59			
Brand differentiation (*reflective*)	Customers can easily recall our brand.	3.80	.83	.66	.83	.50	.83
	We sell most of our products under a brand name.	3.86	.88	.66			
	Our brand is different from all other brands in terms of actual product attributes (features that can be physically identified by touch, smell, sight, taste etc.).	3.71	.87	.65			
	Our brand is different from all other brands in terms of overall perceived quality (incl. non-tangible, psychological perceptions of the customer).	3.78	.79	.75			
	We pursue a differentiation strategy by branding.	3.80	.83	.78			

Cost leadership

Comparing your business with your major competitors, to what extent do you agree with the following statements?

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Cost leadership (*reflective*)	We continuously improve our processes in order to keep cost low.	3.86	.82	.64	.83	.50	.80
	We are constantly improving our operating efficiency.	3.88	.85	.60			
	Our manufacturing costs are lower than our competitors'.	3.66	.89	.66			
	Our economy of scale enables us to achieve a cost advantage.	3.69	.91	.78			
	We have achieved a cost-leadership position in the industry.	3.73	.85	.82			

Performance

Please evaluate the customer satisfaction of your business over the past year relative to your major competitors.

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Customer satisfaction (*reflective*)	Customer satisfaction	3.85	.72	.71	.85	.58	.84
	Delivering value to our customers	3.87	.73	.70			
	Delivering what our customers want	3.85	.77	.81			
	Retaining valued customers	3.87	.75	.81			

Please evaluate the market effectiveness of your business over the past year relative to your major competitors.

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Market effectiveness (*reflective*)	Market share growth	3.71	.82	.78	.86	.61	.86
	Growth in sales revenue	3.75	.87	.83			
	Acquiring new customers	3.74	.77	.77			
	Increasing sales to existing customers	3.81	.75	.72			

Please evaluate the profitability of your business over the past year relative to your major competitors.

Factor	Indicator	Mean	σ	Loading/ Weight	CR	AVE	α
Profitability (*reflective*)	Business unit profitability	3.68	.79	.82	.90	.69	.90
	Reaching financial goals	3.69	.83	.83			
	Return on investment (ROI)	3.67	.87	.82			
	Return on sales (ROS)	3.64	.83	.85			

Items marked with * were dropped

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