The CRM Process: Its Measurement
and Impact on Performance

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Abstract

Understanding how to effectively manage relationships with customers has become a very important topic to both academicians and practitioners in recent years. Yet, the existing academic literature and the practical applications of CRM strategies do not provide a clear indication of specifically what constitutes CRM processes. In this study, we (a) conceptualize a construct of the CRM process and its dimensions, (b) operationalize and validate this construct, and (c) empirically investigate the organizational performance consequences of implementing CRM processes. Our research questions are addressed in two cross-sectional studies across four different industries and three countries. Our first key outcome is a theoretically sound CRM process measure, which outlines three key stages -- namely the initiation, maintenance and termination phase. Our second key result is the finding that implementing CRM processes has a moderate positive association with both perceptual and objective company performance.

The CRM Process: It's Measurement and Impact on Performance

Understanding how to effectively manage customer relationships has become a very important topic to both academicians and practitioners in recent years. Organizations are realizing that customers have different economic value to the company and are subsequently adapting their customer offerings and communications strategy accordingly. Thus, organizations are in essence, moving away from product or brand-centered marketing towards a customer-centered approach.

Nevertheless, some key problems need to be addressed. While the conceptual underpinnings of a customer relationship management strategy are hardly questioned, the implementation challenges appear to be enormous as evidenced by commercial market research studies. These studies provide some convergent validity that about 70% of customer relationship management projects result in either losses or in no bottom line improvement in company performance (Gartner 2003).

Previous studies have focused on components of a CRM strategy such as the link between satisfaction and business performance (Kamakura et al. 2002), the link between customer loyalty and profitability (Reinartz and Kumar 2000), customer profitability heterogeneity (Niraj, Gupta, and Narasimhan 2001), and customer loyalty programs (Verhoef 2003). However, there is a severe lack of research which takes a broader, strategic focus across firms. There is no clear evidence regarding either the characteristics of successful CRM approaches nor why CRM may potentially fail. Furthermore, the existing academic literature and practical applications of CRM do not provide a clear indication of specifically what constitutes the implementation of CRM processes. Some view CRM primarily as investing in technology and software, while others treat CRM more expansively and are aggressive in developing sound and productive relationships with customers. In addition, some companies have implemented CRM processes to a greater degree than others. It is therefore important to identify the types of CRM activities that can be employed and how these might relate to company performance and profitability.

Given this situation, the key contribution of the current paper is to conceptualize and operationalize a measure of the degree to which CRM processes have been implemented. In particular, we examine what functional and organizational competencies are necessary to conduct effective and profitable CRM activities. Developing such a measure or index of CRM processes will then allow us to determine whether higher levels of implementing CRM processes are associated with improved economic performance. We further examine some conditions under which CRM processes are associated with superior performance outcomes (i.e., moderators of this relationship).

Theoretical Foundation of the CRM Process

One of the challenges of defining CRM is that this definition is contingent on the level at which CRM is practiced within an organization – or for that matter, what the researcher or manager believes about the correct level of CRM. There are three different possible levels: the functional level, the customer-facing level, and the company-wide level.

In this paper, we focus our research on the CRM process on the customer-facing level. This perspective includes building a single-view of the customer across all contact channels and having customer intelligence distributed to all customer-facing functions. This view stresses the importance of coordinating information across time and across contact channels in order to systematically manage the entire customer relationship. For example, a bank customer might have both a loan product and a savings product, might interact with the bank through various channels, as well as having different types of interactions (transaction, information request, complaint) which may change over time. A CRM process on the customer-facing level would capture these interactions and would result in coordinated and well-defined actions through different functions based on the generated intelligence.

A key question is how should the CRM process be conceptualized at the customer-facing level? The existing literature suggests that four distinct factors should be captured: (1) building and managing ongoing customer relationships delivers the essence of the marketing concept (Webster 1992; Morgan and Hunt 1994), (2) relationships evolve with distinct phases (Dwyer, Schurr and Oh 1987), (3) firms

interact with customers and manage relationships at each stage (Srivastava, Shervani and Fahey 1998), and (4) the distribution of relationship value to the firm is not homogenous (Mulhern 1999; Niraj, Gupta and Narasimhan 2001).

A key theoretical basis for CRM research is the relationship marketing literature. In this area it is theoretically held that building and managing ongoing customer relationships delivers the essence of the marketing concept (Webster 1992; Morgan and Hunt 1994). Another theoretical approach, the new institutional economics approach, uses economic theory to explain the development and breakdown of customer-firm relationships. For example, transaction cost theory (Rindfleisch and Heide 1997) focuses on minimizing the cost of structuring and managing relationships while maximizing the returns from them. Common to all theoretical approaches in the relationship marketing literature is that managing relationships is beneficial for the firm. This perspective has received preliminary support from Reichheld and Teal (1996). However, these observations have been tempered recently by new empirical evidence (e.g., Reinartz and Kumar 2000; Niraj, Gupta and Narasimhan 2001) which stresses the importance of moderating effects. Thus, it is probably not true that more relationship building is always better but rather, that building the right type of relationship (depending on situational factors) is critical. In other words, facilitators such as organizational design, adequate incentive schemes, and IT resources as well as industry, company, or customer structures may affect the performance of relationship marketing activities.

The second aspect is that the CRM process should acknowledge that relationships evolve with distinct phases (Dwyer, Schurr and Oh 1987). Thus, relationships cannot be viewed as multiple independent transactions; rather, the interdependency of these transactions creates its own dynamic over time. In other words, CRM processes clearly are a longitudinal phenomenon. The process of relationship evolution can be subject to termination at any point through customer causes (ceasing of category consumption), competitive causes, or through internally unintended (attrition through service problems) or internally intended causes (customer firing).

The third aspect is that the recognition of relationship evolution has clear implications for the organization: firms should interact with customers and manage relationships differently at each stage (Srivastava, Shervani and Fahey 1998). For example, Jap and Ganesan (2000) find that the effect of transaction-specific investments on relationship commitment in manufacturer-retailer relationships is positive in the exploration and the decline phase. One goal of CRM is to systematically and proactively manage the various stages of the relationship. For example, companies systematically attempt to mature relationships by cross and up-selling of products with high purchase likelihood (Kamakura et al. 2003).

The final aspect of our conceptualization is the recognition that the distribution of relationship value to the firm is not homogeneous (Mulhern 1999; Niraj, Gupta and Narasimhan 2001). This is a consequence of the increasing adoption of recent account practices, especially activity-based costing (ABC). The key advantage of ABC is that firms are able to make profitability statements along customer relationship lines and not only along product lines. This then allows firms to investigate resource allocations that are made against this customer relationship profitability distribution. A common finding is that best customers do not receive their fair share of attention while some companies overspend on marginal customers. A key goal under a CRM paradigm is to define different resource allocations for different tiers of customers where the customer tier membership depends on the economic value of that customer or segment to the firm (Zeithaml, Rust, and Lemon 2001).

The continuous balance of CRM activities at each stage (i.e. customer acquisition, retention, and relationship termination decisions) should be guided by the attempt to maximize the value of the set of concurrent customer relationships and therefore be associated with better overall company performance. We therefore define the CRM process at the customer-facing level as:

A systematic process to manage customer relationship initiation, maintenance, and termination across all customer contact points in order to maximize the value of the relationship portfolio.

Our view of the CRM process thus entails the systematic and proactive management of relationships as they move from beginning (initiation) to end (termination), with an execution across the

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various customer-facing contact channels. This necessitates information generation through analyzing customer as well as prospect needs and behavior and subsequently to act on this information contingent on customer value and lifecycle stage. We attempt to capture the multidimensional components (lifecycle stage, customer evaluation, and interaction) in a multilevel model.

Similar to other multilevel models in the literature (Brady and Cronin 2001), our model suggests that each of the primary dimensions of the CRM process (relationship initiation, maintenance, and termination) has distinct sub-dimensions. Customer evaluation is the first sub-dimension of each primary dimension. The subsequent sub-dimensions are acquisition and recovery management for the initiation stage, retention, up/cross-selling and referral management for the maintenance stage, and exit management for the termination stage. These 9 sub-dimensions provide a structure for different CRM-related activities and serve as the basis for a conceptual framework for the CRM process construct. We consider the 9 sub-dimensions to be formative (i.e. to consist of explanatory combinations of indicators that cover the distinct activities involved).

Our conceptualization is intended to measure how systematic firms are in practicing the various activities of the CRM process. We believe that it is very important to capture the systematic aspects of the process, particularly if the process is practiced on a large scale such as in a B-to-C environment. If firms formalize their CRM efforts, they become more consistent in execution across contact channels, employees, and the portfolio of customers. It is important to note that formalization is not meant in terms of rigidity but in terms of conformance to specification. For example, firms want to avoid the mistake of not identifying a good customer and subsequently not rewarding him/her accordingly (Type I error). Also, firms want to prevent wrongfully classifying low value customers as high-value customers and subsequently overspending resources (Type II error). The development and reliance on a systematic approach that aids in the measurement of customer value and in the interaction with these heterogeneous customers decrease these errors.

It is important to compare our approach to other frameworks that address similar issues. These include the Service Profit Chain (SPC - Heskett et al. 1994), Return on Quality (ROQ - Rust et al. 1995), Customer Asset Management (CAM - Berger et al. 2002), and Customer Equity (CE - Blattberg, Getz, and Thomas 2001, Rust, Lemon, and Zeithaml 2001). Clearly, all four approaches are customer-centric and customer knowledge (i.e., customer data bases and surveys) is critical to their implementation. However, while the SPC and ROQ approaches deal with service quality issues, the CAM, CE, and our measure of CRM processes focus more on identifying profitable customers and treating them adequately. CAM and CE deal more with applying traditional marketing techniques to manage customer assets in terms of homogeneous customer segments. CRM, on the other hand, expands on this approach by supplementing traditional marketing techniques with other relationship management activities (systems to regain lost customers, up- and cross-selling, referral management, etc.) at the clearly identified stages of the customer relationship (i.e., initiation, maintenance, and termination). Finally, CAM and CE focus on customer segments as *assets*, while our CRM process framework centers on *individual* customer *relationships*. Thus, our CRM approach supplements the important principles emanating from these other frameworks. In addition, it is important to note that the key concept of customer satisfaction is a central foundation across all of these approaches (Oliver 1999).

A Model of the Performance Outcomes of CRM Implementation

Adopting and implementing the CRM process is only the initial part of the story. It is also critical to establish whether CRM is "a good thing to do." Given the dearth of sound empirical findings in the domain and the fact that evidence is now suggesting that CRM strategies may not be performing as well as many had expected, an investigation of the CRM process-economic performance link should be of great interest to managers and academics. A second goal of this paper, therefore, is to conceptualize and test a model of how the three primary CRM dimensions are associated with organizational performance. Figure 1 presents an overview of the theoretical model which has two key

components. First, we investigate the main effect of the CRM process on economic performance. Second we examine moderating effects, which may serve to establish some contingency conditions.

[Figure 1 approximately here]

First, in terms of performance outcomes, we relate the three CRM dimensions to two types of performance measures – perceptual and objective. While most research in marketing strategy assesses the impact of the focal construct on perceived performance (e.g., Kohli and Jaworski 1990; Bharadwaj, Varadarajan, and Fahy 1993), the current study also assesses the association with a measure of objective economic performance (Varadarajan and Jayachandran 1999).

Second, regarding the contingencies of the CRM process-economic performance link, several important moderating variables that are of interest to managers and that may either enhance or weaken the focal link are examined (Bharadwaj, Varadarajan and Fahy 1993; Holmström 1979). Supply-side characteristics would include a CRM compatible organizational alignment (i.e., training procedures, employee incentives, and organizational structure) and CRM technology (i.e., investments in CRM technology and one-to-one communication capabilities). Finally, the specification of our model controls for the types of industries investigated.

Hypothesis Development

Effects on Economic Performance. As mentioned earlier, our CRM process construct captures the degree of formalization of how to manage customer relationship initiation, maintenance, and termination. If companies are able to more effectively understand the value of the customer to the firm, they will perform better on these three primary dimensions. They will then be better able to manage individual customer relationships as well as more effectively determine the contribution of these relationships to the profitability of the unit and/or the firm.

Having a high degree of CRM process implementation means that firms are able to adjust their interactions according to the lifecycle stages of their customers and that they may be able to influence these stages actively (e.g., maturing or extending relationships (Zeithaml, Rust, and Lemon 2001)). The

goal of these activities is to align the resources spent on the customers with the revenues/profits derived

from those same customers (Mulhern 1999). Firms will spend a disproportionate amount of resources on

those customers that are highly profitable or that are worth the resource allocation because they are

"high potentials." Furthermore, firms will economize on unprofitable or marginally profitable

customers who then either may leave the relationship or who may build up their relationship with the

focal firm. Therefore, we expect a significant and positive association between the degree of a business

unit's customer management practices with regard to relationship initiation, maintenance, and

termination and the business unit's economic performance.

> *H1: Higher economic performance is associated with greater implementation of CRM processes at the stage of relationship (a) initiation, (b) maintenance, and (c) termination.*

It should be noted that although all three sub-sections of the hypothesis are in the same direction,

the possibility exists that the magnitude of the effect across these three stages varies. Therefore, the

question can be asked as to whether effectiveness of these different stages can differentially contribute

to economic performance. Unfortunately, prior research does not provide guidance to enable the

development of specific hypotheses. However, we perform an exploratory analysis to address this

important issue.

As mentioned previously, there are several factors, which may moderate the relationship

between the implementation of the CRM process and economic performance. We examine two

moderators which have been identified as having strong theoretical and/or managerial relevance and

impact: CRM compatible organizational alignment and CRM technology.

CRM compatible organizational alignment. Day (1992) argues that the various corporate

functional units have become more marketing-oriented because marketing is becoming more important.

Likewise, the view that the marketing function is distinct and non-overlapping with other corporate

functions has become mostly obsolete (Webster 1992). Therefore, as firms become able to align their

organizations and structures with their market goals more effectively, one would expect them to be more

successful in that market because they can adapt more readily to the needs of customers. In order to address these needs, there is an imperative to bring customer knowledge and orientation deeper into the organization (Kohli and Jaworski 1990; Day and Montgomery 1999).

A critical determinant of an organization's ability to influence CRM compatible activities and processes is the development of appropriate compensation schemes and organizational structures. For example, agency theory argues that designing incentive-compatible contracts with employees that realign company goals and the employees' utility is needed to maximize company profit (Holmström 1979). Consistent with this argument, contingency theory hypothesizes that company profit will be maximized if appropriate organizational structures are depicted (Black and Boal 1994; Miller 1996). The more these aspects support specific CRM-compatible behavior, the stronger should be the CRM process-economic performance link. In others words, if it is stressed to employees that CRM activities are important, the organization is structured to facilitate these activities, and employees are rewarded for engaging in CRM-related activities, the more likely they are to stress these activities in their interactions with customers.

> *H2: The greater the level of CRM compatible organizational alignment, the stronger the positive link between economic performance and (a) relationship initiation, (b) maintenance, and (c) termination.*

CRM technology. Another critical moderator of the CRM process-economic performance link may be the degree to which a firm uses supporting information technology. In this context, CRM technology is the information technology that is deployed for the specific purpose of better initiating, maintaining and/or terminating customer relationships. The potential for information technology to constitute a sustainable competitive advantage has been amply discussed (Bharadwaj, Varadarajan, and Fahy 1993). The key point is that CRM technology plays a critical role in the context of leveraging CRM related activities and thus, contributing to an improved organizational performance in the market. In fact, CRM technology is often (incorrectly) equated with CRM. We would therefore expect that,

ceteris paribus, CRM technology would function as a facilitator of CRM activities and contribute to better performance in the market.

Nevertheless, this strong conceptual support should be tempered in light of evidence from practitioner and commercial market research reports that investments in CRM related technology may be associated with lower economic performance. Day (2000) echoes this view by suggesting that while the cost aspects of CRM investment are evident, the revenue enhancing aspects are much less obvious. Further there is anecdotal evidence that a large proportion of CRM technology deployments do not perform to expectations (Gartner 2003).

If this is so, there are likely to be multiple reasons such as lack of defining objectives or lack of appropriate training procedures for this disappointing result (Reinartz and Chugh 2002). However, this does not necessarily mean that the technology is at fault per se. It is also important to point out that investments in technology represent a direct short-term financial investment which may have a negative effect on the bottom line in the short run. The pay offs for these investments are more likely to be realized over a longer time period.

Taking all this together, it is clear that there are conflicting arguments concerning the direction of the effect of CRM technology on firm or economic performance. However, since there seems to be more evidence on the positive side, we still hypothesize a positive moderating effect for CRM technology. Thus:

> *H3: The greater the level of CRM technology, the stronger the positive link between economic performance and (a) relationship initiation, (b) maintenance, and (c) termination.*

Control Variable

Industry. In order to control for the possibility of variance across different industries, the type of industry was entered as a control. This permits us to account for mean differences of economic performance across industries.

METHODOLOGY

In order to test our framework, data using both primary and secondary sources was collected. First, a cross-sectional survey was conducted in three countries - Austria, Germany and Switzerland in Fall 2001. We limited our investigation to consumer markets since business-to-business relationships are characterized by small numbers of customers as well as a strong reliance on salespeople as major means of communications between firms and clients. In our initial empirical work on CRM, we wanted to target a more diverse environment of multiple customer contact points which is characteristic of consumer markets. Based on literature reviews and pretest interviews, industries were selected based on characteristics such as having a large customer base, intensive usage of a variety of channels, professionalism in CRM activities, and market pressure to differentiate from the competition. Based on these characteristics, the following industries were identified as adequate targets: financial services, hospitality, online retailing, and power utilities.

A pretest of the questionnaire was performed on a small sample of marketing managers and CRM experts. Then, a second pre-test of the questionnaire was performed to assess the validity of the scales. The data were obtained from a large-scale mail survey. The final questionnaire was sent to a sample of 1,015 companies which was derived from industry associations' member lists. A personalized mailing was undertaken to the executives who were identified in pre-mailing telephone calls as responsible for CRM operations. Whenever possible, we asked potential respondents to give us their e-mail address and to fill out an electronic version of the questionnaire. In 72% of the cases, we received digital responses rather than traditional mail responses. To increase the response rate, we conducted follow-up telephone calls three weeks after the initial mailing. This resulted in an effective response rate of 21.1%. We consider this rate satisfactory, given that average top management survey response rates are in the range of 15% to 20% (Menon et al. 1999). Altogether, 214 responses were obtained, of which 211 were usable.

In more than 75% of the cases, the questionnaire was filled out by senior executives such as marketing or sales executives. These executives were knowledgeable key informants about information concerning CRM design since they are directing entities which in most cases are responsible for CRM activities. The unit of analysis was the strategic business unit.

In order to strengthen the insight and veracity of our analysis, we also collected objective performance measures for the existing set of firms. This is particularly important for empirical survey research where a reliance on subjective performance measures may be a limitation (Jaworski and Kohli 1996). Our goal was to assess the degree to which the subjective and the objective performance measures converge in order to lend greater credibility to our survey results (Han, Kim, and, Srivastava 1998). Since our sample consists of public as well as non-public firms from different industries, we could not rely on absolute performance measures; rather measures of relative performance were needed. Similar to previous studies, performance was assessed in terms of profitability (McKee, Varadarajan, and Pride 1989; Han, Kim, and Srivastava 1998). The information was obtained from company reports for public companies as well secondary sources for non-public companies. The performance measure we chose was Return on Assets (ROA), a measure which is consistent with previous studies (Han, Kim, and Srivastava 1998). In total, we were able to collect the objective performance measures for 98 companies (81 public, 17 non public). The ROA measure that entered our analysis was the average ROA of the years 2001 and 2002. Using the average is more appropriate since it is more realistic to expect a longer-term impact of the CRM process rather than a short-term spike.

A possible concern in single informant studies is that an individual may not necessarily possess a totally accurate or unbiased view of the entire organization. Relatedly, one could question the reliability of the subjective performance indicators that were used in the study (i.e., they could be artificially related to the other indicators measured). Therefore, in order to cross-validate the analysis and to counter a possible common-method bias, a second set of primary data was collected from a different set of respondents within the same firm sample (hereafter called Sample 2). The objective was

to assess the robustness of Sample 1 findings using a separate sample of respondents (Deshpandé, Farley and Webster 1993). The sampling frame was the 211 companies that responded in the first round of data collection. The second set of data was collected as soon as possible after concluding Sample 1 in order to minimize any temporal biases. In this second sample, 95 valid responses (45% response rate) were obtained from the same group of target respondents (senior executives, sales managers, marketing managers). Since a substantial part of our participants in our study are SMEs, it was extremely difficult to identify a second, knowledgeable informant in such companies. Many respondents from Sample 1 were also very reluctant to name second informants since they did not appreciate this cross-validation procedure. In order to assess potential differences in sample respondents, Sample 1 and Sample 2 respondents were compared on several descriptive variables, however, no differences were found between the groups.

Item Measurement and Index Construction

As mentioned earlier, the key goal of the present study was to develop a comprehensive operationalization of the three primary dimensions of implementing CRM processes (i.e., relationship initiation, maintenance, and termination). To achieve this goal, scales and measurement items for the study were developed as follows. All of our constructs employed reflect a composite of individual indicators across different, unique sources and are therefore operationalized effectively in a formative rather than reflective way (Bagozzi 1994). We therefore followed the guidelines for constructing indices based on formative indicators as proposed by Diamantopoulos and Winklhofer (2001). They identify four issues critical for successfully constructing indices with formative indicators: (a) content specification, (b) indicator specification, (c) indicator collinearity, and (d) external validity. Our focal independent variables are the three primary dimensions of the CRM process. To exemplify how we proceeded to construct valid indices with formative indicators, we will refer to these key constructs.

Content Specification. A new formative, multi-item scale of CRM processes at the customer-facing level that captures the three lifetime stages of customer relationships was developed. More

precisely, on the construct level, the domain of implementing CRM processes was defined as covering the activities of acquisition management and regain management at the initiation stage, retention management, up-sell/cross-sell management, and referral management at the maintenance stage, and termination management at the final stage of the customer relationship. On the construct level, we also capture activities of evaluating customers at each of the three stages, leading to nine sub-dimensions of implementing CRM processes on the construct level. These sub-dimensions represent latent constructs that reflect the presence or absence of CRM activities. Higher-level indices that express the total degree of CRM activities at the three stages of customer lifecycles were also established. Thus, in our content specification, we sought to capture major facets of evaluation and management activities along customer-company relationships.

Indicator Specification. Critical for the design of valid indices with formative indicators is the choice of items since the indicators must capture the entire scope of the latent construct as described above. Based on an extensive review of relevant articles in Marketing journals, the business press, as well as exploratory interviews with managers responsible for CRM systems, we identified 42 items that were evaluated by participants of pre-test interviews as capturing all major sub-processes in implementing CRM at the customer-facing level. These indicators are listed in the Appendix. A seven-point Likert format was used for rating.

Indicator Collinearity. Since formative measurement models are based on linear equation systems, substantial collinearity among indicators would affect the stability of indicator coefficients. In our example, none of the 42 indicators revealed serious multicollinearity problems.

External Validity. The very nature of formative measurement renders irrelevant traditional assessments of convergent validity and individual item reliability (Hulland 1999, p. 201). However, this does not allow the researchers to arbitrarily link sets of items to constructs. Aside from strong theoretical foundations, researchers must assure that all indicators that form a construct are included. In order to test for external validity, we follow the suggestions of Diamantopoulos and Winklhofer (2001)

to estimate a MIMIC model with our aggregate indices INITIATE, MAINTAIN, and TERMINATE, and their respective sub-dimensions and formative indicators. Four variables that capture the commitment of top management to implement CRM were used as reflective indicators of the implementation of CRM processes.[1] The loadings of all four items turned out to be highly significant, with loadings of .861, .839, .729, and .802.

As described above, the CRM process is conceptualized as a second-order factor measurement model which can be approximated using various procedures. One of the easiest to implement is the hierarchical component model suggested by Wold (1980). In essence, a second-order factor is directly measured by observed variables for all the first-order factors. PLS is appropriate for estimating our measurement model because it provides a means for directly estimating component scores (i.e., the three dimensions relationship initiation, maintenance and termination). Because these latent variable scores are determinate, one can use PLS to model formative indicators, as is the case here. The determinate nature of the PLS approach avoids parameter identification problems that can occur under covariance based analysis (Bollen 1989).

Nomological Validity. Given that the formation of 'implementation of CRM processes' as a new formative construct is a key objective of our study, we included 11 additional items in our survey. The items were measured by the means of 7 point semantic scale formats ("With regard to your SBU, to what extent do each of the following activities represent a strength or weakness for you?"), anchored "major weakness" (1), "neither strength nor weakness" (4), and "major strength" (7). To check the nomological validity of our nine sub-dimensions and the three higher-level indices, we estimated the

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[1] Two items were stated as "strongly disagree – strongly agree" 7 point Likert-scale formats ("CRM is a central aspect of our business strategy", "CRM has become a top management issue in our SBU"), whereas the other two items were measured by the means of 7 point semantic scale formats ("With regard to your SBU, to what extent do each of the following activities represent a strength or weakness for you?" … "The institutionalization of a CRM philosophy", "Getting *top management* commitment to CRM"), anchored "major weakness" (1), "neither strength nor weakness" (4), and "major strength" (7).

bivariate correlations between the sub-dimensions or indices and the respective independent weakness/ strength indicators.

Our formative index for acquisition management activities shows correlations of .36 and .34 with the independent strength/weakness items "acquiring high value customers" and "implementing systematic customer acquisition," while our regain management index reveals a correlation of .35 with the statement "regaining high value customers" as strength of the SBU. The index 'measurement at the maintaining stage' is significantly correlated with the variable "understanding and determining the value of a customer" ($\rho = .55$). Similar strong associations are observable between our retention management index, "retaining high value customers" (.38) and "building long-term relationships with our valued customers" (.32). Our index 'management of up/cross-selling' reveals even stronger correlations with the items "implementing procedures for up-selling" (.50) and "implementing procedures for cross-selling" (.51). Correlations of .36 ("management of word-of-mouth") and .47 ("managing customer referrals") emphasize that the index 'customer referral management' measures the degree of activities related to customer referrals. Since the weakness/strength statement "discontinuing relationships with low-value customers" is also significantly correlated to the index 'activities to de-market customers' (.44), we conclude that all our indices represent valid measures of the respective constructs.

For the regression analysis, the relationship initiation, maintenance, and termination indices are constructed by weighted multiplication of the individual indicators with the standardized PLS weights, similar to the ACSI index (Fornell and Johnson 1996).[2]

Model Specification and Estimation

The complete model specification is given in equation 1. Variables are grouped into main effects (β's), interaction effects (γ's) and control variables (δ's). The control variables in our system of equations are dummy variables for industry effects.

Economic performance =

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[2] We refer the interested reader for the details of our measurement model to the website –particularly a description of the data structure, correlations, and the PLS coefficients.

α +
β_1 Relationship Initiation +
β_2 Relationship Maintenance +
β_3 Relationship Termination +
β_4 CRM Compatible Organizational Alignment +
β_5 CRM Technology +
γ_1 (CRM Compatible Organizational Alignment x Relationship Initiation) +
γ_2 (CRM Compatible Organizational Alignment x Relationship Maintenance) +
γ_3 (CRM Compatible Organizational Alignment x Relationship Termination) +
γ_4 (CRM Technology x Relationship Initiation) +
γ_5 (CRM Technology x Relationship Maintenance) +
γ_6 (CRM Technology x Relationship Termination) +
δ_1 Industry 2 +
δ_2 Industry 3 +
δ_3 Industry 4 +
ε_1 (1)

where:
- Economic performance (perceptual) = formative, multi-item measure (adapted from Kohli and Jaworski, 1990, Desphandé, Farley and Webster, 1993) with four indicators
- Economic performance (objective) = Net income in year x/total assets in year x (ROA).
- Relationship Initiation, Relationship Maintenance, Relationship Termination, CRM Compatible Organizational Alignment, and CRM Technology = formative multi-item measures
- Industry 2 = Financial Services
- Industry 3 = Power utilities
- Industry 4 = Hospitality

All multi-item measures are given in the Appendix. Table 1 lists the summary statistics for the

measurement scales.

[Table 1 approximately here]

Based on our previous discussion, we estimate three different models:

Model 1:   Economic performance (perceptual)$_{\text{Sample 1}}$ = f(covariates)$_{\text{Sample 1}}$

Model 2:   Economic performance (objective)   = f(covariates)$_{\text{Sample 1}}$

Model 3:   Economic performance (perceptual)$_{\text{Sample 2}}$ = f(covariates)$_{\text{Sample 1}}$

Given our data structure, this configuration maximizes the degrees of freedom for each

estimation and addresses at the same time the common-method bias issue. The variables were mean

centered for the analysis.

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RESULTS

The results of the estimation are summarized in Table 2. The effective sample size for the

estimation with perceptual performance (Model 1) is 211 observations and the one with objective

performance (Model 2) is 98 observations. Both estimations fit the data well with an R^2 of .24 for

perceptual performance and .49 for objective performance. Thus, our model helps us to highlight some

factors that are associated with more successful CRM process implementations.

[Table 2 approximately here]

One-tailed significance levels are reported. This is appropriate since we exclusively test

directional hypotheses. Since the hypothesized effects are equal for both performance measures

(perceptual and objective), the results are discussed together.

Relationship Stages and Economic Performance: It was hypothesized that the degree of CRM

process implementation is positively associated with economic performance (H1a/b/c) at the three stages

of initiation, maintenance, and termination. For our perceptual performance measure, support for this

hypothesis is strongest for maintenance ($\beta_2 = .71$; $p < .01$). For initiation, support is marginal ($\beta_1 = .47$;

$p < .05$) and it is non-significant for termination. In the case of objective performance, all three

coefficients are marginally significant ($\beta_1 = 9.04$; $p < .1$; $\beta_2 = 8.16$; $p < .05$; $\beta_3 = 6.97$; $p < .05$). Thus,

the more firms engage in implementing CRM processes, especially at the initiation and maintenance

stage, the better they seem to perform.

Moderating Effects of CRM Compatible Organizational Alignment: A CRM compatible

organizational alignment was hypothesized to have a positive moderating effect on the CRM processes-

economic performance link at each of the three stages of CRM (H2a/b/c). For the perceptual

performance measure, this hypothesis was marginally supported for the initiation ($\gamma_1 = .17$; $p < .05$) and

fully supported for termination stages ($\gamma_3 = .18$; $p < .01$). The hypothesis was not supported at the

maintenance stage, but the association was at least in the hypothesized direction (positive). For objective

performance, the moderating effect was marginally significant for initiation ($\gamma_1 = 2.45$; $p < .05$), but not

the other two stages.

Moderating Effects of CRM Technology: It was hypothesized that CRM technology has a

positive moderating effect on the CRM processes-economic performance link at each of the three stages

of the relationship (H3a/b/c). For perceptual performance, this hypothesis was supported only in the case

of termination ($\gamma_6 = .09$; $p < .05$). Interestingly, for the initiation stage the moderating effect was

negative ($\gamma_4 = -.11$; $p < .05$). At the maintenance stage, the moderating effect was in the expected

positive direction, but not significant. In terms of objective measures, all three interaction effects were

non significant. These findings are somewhat contrary to our expectations. Thus, the sophistication of

CRM technology employed is not necessarily linked to a company's ability to improve economic

performance through CRM processes.

Industry: Our control variables capture effects due to industry membership. The hospitality

industry had a marginally higher average performance vis-à-vis the base case, both for perceptual

performance ($\delta_3 = 1.53$; $p < .05$) as well as for objective performance ($\delta_3 = 33.92$; $p < .1$). The remaining

industry dummies were not significant for either perceptual or objective performance. Thus, our findings

appear to be relatively consistent across industries.[3]

Common Method Bias

When dependent and independent variable data are collected from a single informant, common

method bias can be a potential problem. Following Podsakoff and Organ (1986), Harman's one-factor

test was used to examine the extent of this bias. The results of the principal components factor analysis

revealed that there are 10 factors with eigenvalues greater than 1.0 which accounted for 76% of the total

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[3] We also tested for differences in the effects of interest (initiation, maintenance and termination) for the various industries for model 1. None of these interactions were significant.
Furthermore, we also explored the possibility of mean differences between the different countries. Taking Switzerland as a base case, we found a significant positive effect for the cross-validation (Model 3) for Austria and Germany. For the other two equations (Model 1 and Model 2), the country effects were not significant. When including the country effects, none of the other parameter signs or significances changes.

variance. Common method variance does not appear to be a problem because: several factors were identified, the first factor did not account for the majority of the variance (only 24%), and there is no general factor in the unrotated structure (Podsakoff and Organ 1986).

To further address any concerns due to common method variance, the estimation of Sample 1 data were cross-validated with Sample 2 data. Specifically, we estimated the association of our Sample 1 covariates with Sample 2 perceptual performance measure (Model 3). The results of this cross validation are shown in Table 2 as well.

Similar to Model 1, the estimated specification fits the data reasonably well with an R^2 of .29. The key finding is that all three effects for H1 were replicated. In other words, the relationship to economic performance was positive at both the initiation ($\beta_1 = .93$; $p < .01$) and maintenance stages ($\beta_2 = .60$; $p < .05$). As in Model 1, the effect at the termination stage was negative, but non significant. For H2, all three coefficients are consistent in terms of signs with our findings for Model 1. However, they are non significant even at the initiation and termination stage. For H3, all three coefficients were found to be consistent with our results for Model 1. Again, the coefficients are non significant even at the initiation and termination stage. Yet we have a marginally significant negative main effect for CRM Technology ($\beta_5 = -.17$; $p < .1$). The fact that the effect size for H2 and H3 are similar to Model 1 could be an indication that the non-significant findings of Model 3 are a function of the smaller sample size. This occurred because of a difficulty in acquiring second informants in many of the companies.

DISCUSSION

The goal of the current study was threefold: (1) to conceptualize and operationalize the process of CRM implementation, (2) to determine whether the implementation of CRM processes is positively linked to performance, and (3) to identify some key moderators of the relationship between CRM processes and performance. The results of this empirical effort from two studies produced a number of interesting findings.

First, the data provide support for our conceptualization for the CRM construct. We grouped the key activities of a formalized CRM process in terms of three primary dimensions: relationship initiation, maintenance, and termination. We then developed items to assess the extent to which these dimensions are implemented. This is an important contribution for several key reasons. On the one hand, this represents a first step toward developing what constitutes a standard for defining the nature of CRM processes. As mentioned earlier, there have been a variety of different ways of conceptualizing CRM processes in the academic literature as well as in practice. A good metric for this construct is needed to establish a common ground so that the results of CRM processes can be compared across companies and research studies. This index can also be employed as a guide for future research. On the other hand, our conceptualization highlights the importance of separating the three dimensions of CRM processes as performance may vary at each of these stages. Simply examining CRM processes at a general level does not capture the detailed nature of relationship management. A key goal of future research would be to examine factors which influence performance at each of these three stages in more detail.

Second, our findings indicate that the implementation of CRM processes is associated with better company performance in two of the three stages. The strongest effect is for relationship maintenance, followed by relationship initiation. The effects for relationship termination were either low or non-significant (even in the negative direction for perceptual performance). Thus, CRM does appear to produce some of the pay off that companies expect when they invest in CRM activities. What is clear, however, is that some types of activities may increase performance while others may not. In the case of termination, perhaps one explanation for the negative results is that companies are subject to Type II error. That is, it is possible that companies are reluctant to terminate relationships with customers that are not profitable. Alternatively, perhaps companies are not as effective in implementing CRM processes at this stage.

Further interesting results are provided by the moderator variables. First, there was a significant interaction between a CRM compatible organizational alignment and both relationship termination and

initiation. Thus, implementing CRM processes is more likely to improve performance when the company develops an incentivization and organizing scheme to support CRM-compatible behavior. One might argue that CRM processes are already more developed at the maintenance stage leaving the greatest room for improvement at the initiation and termination stages. This rationale is supported by data in Table 1 which indicates that companies are by far highest in implementing maintenance processes.

If a proper organizational structure and incentives are not in place, it may be difficult for CRM processes to produce their desired effects. Thus, it is not enough to simply implement CRM processes. The organization must be organized and a reward structure installed to support these processes. This also suggests that organization variables need to play a key role in future research efforts which attempt to understand the performance impact of CRM.

Another interesting finding is that our data are partially consistent with existing evidence that a large proportion of CRM technology deployments do not perform up to expectations. We find one moderately positive effect and one moderately negative effect while all other moderating CRM technology effects were non-significant. This is an important finding as it attests to the difficulty of making CRM technology investments pay off. However, one could also argue that technological investments offer positive returns only after overcoming initial implementation difficulties. Since CRM IT investments are relatively recent, there could be a potentially reversed effect in the future.

Nevertheless, our results emphasize the key point that successfully implementing a CRM program requires more than just technology and if firms focus only on this aspect, their efforts are likely to be disappointing – at least in the short-term. In particular, the successful implementation of CRM requires a strong people-related component. This may partially explain the negative relationship for CRM technology at the initiation stage. Perhaps, in establishing a relationship with a company, potential customers would rather have contact with people than technology-driven systems. On the other hand, at the termination stage it may be cost efficient to manage low-value relationships using technological

support systems. Since our findings suggest that the effectiveness of CRM technology varies across the three stages, future work in this area needs to explore in more detail processes at each of theses stages.

Managerial Implications

The results of our study have several important implications for managers. First, our research provides a systematic outline of the different CRM activities which occur at each of the three main stages. Thus, a company could use our approach to identify key activities which must be implemented to be successful and an evaluation of these activities can provide a means for comparing their level of implementation to competitors and to other industries.

Furthermore, our results indicated that the CRM process-performance link was not as strong as expected. This suggests that there is considerable room for improvement in the implementation of CRM processes. In particular, our findings strongly suggest that simply implementing CRM technology will not lead to the desired effect. In fact, it may even have a negative effect. Therefore, managers need to carefully evaluate the contributions of technology differently at the three stages of CRM processes.

Managers also need to pay greater attention to other aspects of implementing CRM processes. Our data show that the alignment of organizational aspects is a critical element in the CRM implementation effort. For example, a customer focus needs to be brought deeper into the functional areas of the company; it cannot be isolated to marketing managers. Simply installing technology or CRM software is not enough to ensure that this program will be profitable. Employees must be rewarded for engaging in CRM activities and customer-oriented behaviors.

Fourth, it is often argued that CRM works better in some industries than others. However, in our data we do not find support for this contention, at least for the four industries under investigation. Therefore, our findings suggest that many of the key issues and problems may be relevant *across* a variety of industries.

Limitations and Future Research

Although our study produced interesting and meaningful findings, there are some limitations which need to be discussed. First, a key objective of our study was to conceptualize and operationalize a measure of the three stages of CRM processes. In particular, we conducted an extensive search through the business press, academic literature and supplemented this with interviews of CRM experts to identify relevant CRM processes. Thus, we attempted to capture as many current relevant CRM activities as possible. However, since new CRM processes will evolve over time, one could argue that our sets of processes at each stage will need to be "enriched" or updated as these new activities become common practice in the future.

Second, it should be noted that we are studying a dynamic phenomenon from a cross-sectional perspective. Since capturing this process over time is often difficult, we took a 'snapshot' of the situation at a single point of time. Nevertheless, it is possible that some of the effects are more longitudinal in nature. For example, it is possible that the negative effects of technology may change over time as employees and customers become more accustomed to these systems. It might be that in the long run, one could expect a more positive relationship between the two variables. Therefore, a future longitudinal study might provide interesting insights as well.

Third, it would be worthwhile to investigate how various industry- and firm-specific characteristics drive the degree to which the three CRM dimensions are developed across firms.

Finally, we examine CRM processes at the customer-facing level only. It would be interesting to see how our findings compare as to observations from the company-wide level or the functional level. Clearly, the critical issues will be different at these other levels. To have a complete picture of CRM, all three levels must be examined.

TABLES

Table 1: Summary Statistics for the Measurement Scales

Variable	Number of Items	Frequency	SAMPLE 1				SAMPLE 2			
			Mean	Standard Deviation	Min	Max	Mean	Standard Deviation	Min	Max
Performance (Perceptual)	4	-	18.4	4.4	6.0	27.0	19.0	4.0	8.0	26.0
Performance (Objective)	1	-	.009	.06	-.19	.269				
Relationship Initiation	15	-	5.1	1.8	1.5	9.9	4.9	1.6	1.6	8.4
Relationship Maintenance	20	-	7.1	1.8	2.4	11.2	6.7	1.6	3.2	10.5
Relationship Termination	4	-	4.1	2.0	1.3	9.3	3.6	1.6	1.0	6.9
CRM Compatible Organizational Alignment	4	-	13.7	4.1	4.0	21.0	12.6	3.9	4.0	20.0
CRM Technology	4	-	16.4	5.3	4.0	28.0	15.6	6.2	4.0	28.0
Industry 1 (Online Retailers)	1	64	-	-	-	-	-	-	-	-
Industry 2 (Financial Services)	1	78	-	-	-	-	-	-	-	-
Industry 3 (Power Utilities)	1	28	-	-	-	-	-	-	-	-
Industry 4 (Hospitality)	1	41	-	-	-	-	-	-	-	-

Table 2: Results of Model 1 – Model 3

|	Description	Coefficient	Estimate	Standard error	Estimate[†]	Standard error	Estimate	Standard error
Dependent Variable			Performance (perceptual) - Model 1 -		Performance (objective) - Model 2 -		Performance (perceptual) - Model 3 -	
	Intercept	α	18.4***	.55	n.s.		17.3***	.74
Main Effects	Relationship Initiation	β_1	.47**	.26	9.04*	5.59	.93***	.39
	Relationship Maintenance	β_2	.71***	.23	8.16**	4.80	.60**	.33
	Relationship Termination	β_3	n.s.		6.97**	3.44	n.s.	
	CRM compatible organizational alignment	β_4	n.s.		n.s.		n.s.	
	CRM Technology	β_5	-.16**	.07	n.s.		-.17*	.11
Interactions	CRM org. alignment x Relationship Initiation	γ_1	.17**	.08	2.45**	1.77	n.s.	
	CRM org. alignment x Relationship Maintenance	γ_2	n.s.		n.s.		n.s.	
	CRM org. alignment x Relationship Termination	γ_3	.18***	.05	n.s.		n.s.	
	CRM Technology x Relationship Initiation	γ_4	-.11**	.06	n.s.		n.s.	
	CRM Technology x Relationship Maintenance	γ_5	n.s.		n.s.		n.s.	
	CRM Technology x Relationship Termination	γ_6	.09**	.04	n.s.		n.s.	
Control Variables	Industry 2 (Financial Services)	δ_1	n.s.		n.s.		1.79	.92
	Industry 3 (Power Utilities)	δ_2	n.s.		n.s.		n.s.	
	Industry 4 (Hospitality)	δ_3	1.53**	.80	33.92*	20.72	3.23***	1.11

N   211   98   101
R^2 .24   .49   .29

* $p \leq 0.1$; ** $p \leq 0.05$; *** $p \leq 0.01$ (one-tailed significance levels)

† Dependent variable has been rescaled ($*10^3$)

FIGURE 1

A Model of the Performance Outcomes of the CRM Process
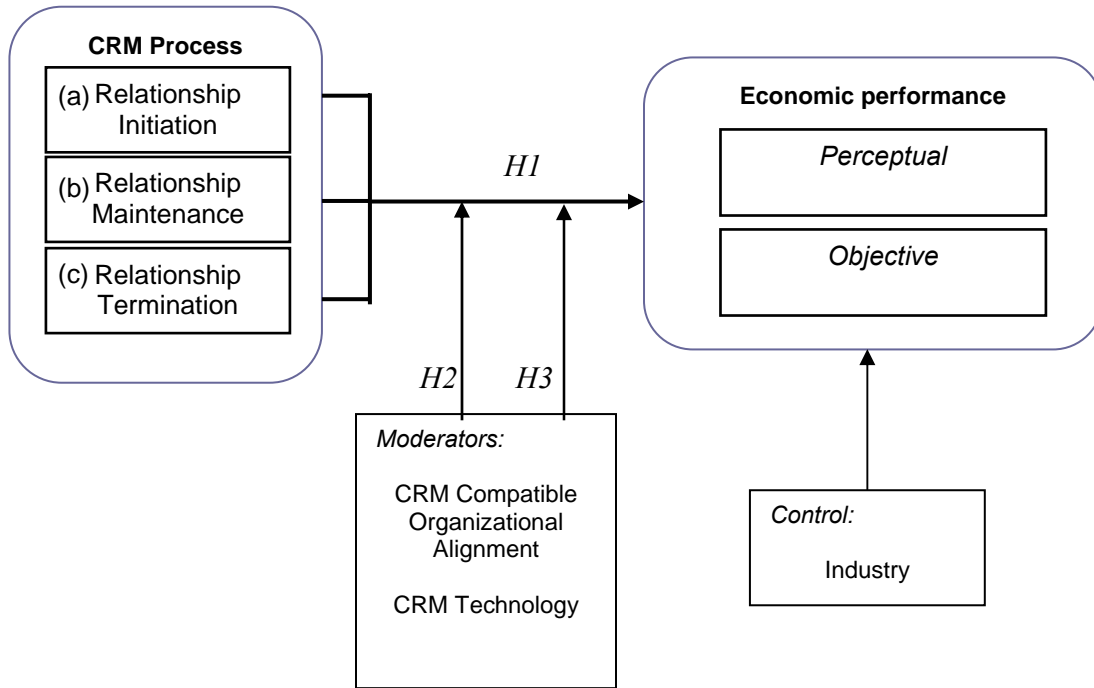
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DESCRIPTION OF MEASURES

CRM Initiation (INITIATE)

Measurement at initiating stage (IMEASURE) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- We have a formal system for identifying *potential* customers. {4.253}
- We have a formal system for identifying which of the *potential* customers are more *valuable*. {4.663}
- We use data from external sources for identifying potential high value customers. {1.590}
- We have a formal system in place that facilitates the continuous evaluation of prospects. {2.615}
- We have a system in place to determine the cost of re-establishing a relationship with a lost customer. {1.993}
- We have a systematic process for assessing the value of past customers with whom we no longer have a relationship. {2.021}
- We have a system for determining the costs of re-establishing a relationship with inactive customers. {1.953}

Activities to acquire customers (ACQUISIT) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- We made attempts to attract prospects in order to coordinate messages across media channels. {1.397}
- We have a formal system in place that differentiates targeting of our communications based on the prospects value. {1.733}
- We systematically present different offers to prospects based on the prospects' economic value. {1.710}
- We differentiate our acquisition investments based on customer value. {1.580}

Activities to regain customers (REGAIN) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- We have a systematic process/approach to re-establish relationships with valuable customers who have been lost to competitors. {1.786}
- We have a system in place to be able to interact with lost customers. {1.881}
- We have a systematic process for re-establishing a relationship with valued inactive customers. {1.663}
- We develop a system for interacting with inactive customers. {1.796}

CRM Maintenance (MAINTAIN)

Measurement at maintaining stage (MMEASURE) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- We have a formal system for determining which of our *current* customers are of the highest value. {3.144}
- We continuously track customer information in order to assess customer value. {3.808}

- ⬩ We actively attempt to determine the costs of retaining customers. {1.826}
- ⬩ We track the status of the relationship during the entire customer life cycle (relationship maturity). {1.760}

Activities to retain customers (RETAIN) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- ⬩ We maintain an interactive two-way communication with our customers. {1.453}
- ⬩ We actively stress customer loyalty or retention programs. {1.379}
- ⬩ We integrate customer information across customer contact points (e.g. mail, telephone, Web, fax, face-to-face, …). {1.581}
- ⬩ We are structured to optimally respond to groups of customers with different values. {1.660}
- ⬩ We systematically attempt to customize products/services based on the value of the customer. {1.870}
- ⬩ We systematically attempt to manage the expectations of high value customers. {1.580}
- ⬩ We attempt to build long-term relationships with our high-value customers. {1.282}

Activities to manage up- and cross-selling (CROSS_UP) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- ◆ We have formalized procedures for *cross*-selling to valuable customers. {2.488}
- ◆ We have formalized procedures for *up*-selling to valuable customers. {2.902}
- ◆ We try to systematically extend our "share of customer" with high-value customers. {1.978}
- ◆ We have systematic approaches to mature relationships with high-value customers in order to be able to cross-sell or up-sell earlier. {2.289}
- ◆ We provide individualized incentives for valuable customers if they intensify their business with us. {1.415}

Activities to manage customer referrals (REFERRAL) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- ◆ We systematically track referrals. {1.992}
- ◆ We try to actively manage the customer referral process. {2.487}
- ◆ We provide current customers with incentives for acquiring new potential customers. {2.440}
- ◆ We offer different incentives for referral generation based on the value of acquired customers. {2.103}

CRM Termination (TERMINATE)

Measurement at termination stage (TMEASURE) *
With regard to your strategic business unit, to what extent do you agree to the following statement?
- ◆ We have a formal system for identifying non-profitable or lower value customers.

Activities to actively de-market customers (EXIT) *
With regard to your strategic business unit, to what extent do you agree to the following statements?
- ◆ We have a formal policy or procedure for actively discontinuing relationships with low value or problem customers (e.g. canceling customer accounts). {1.237}
- ◆ We try to passively discontinue relationships with low value or problem customers (e.g. raising basic service fees). {1.675}

- We offer disincentives to low-value customers for terminating their relationships (e.g. offering poorer service). {1.505}

*: These scales are new and were considered as formative constructs, rated on a 7-point Likert format anchored 1 = strongly disagree, 7 = strongly agree. The variance inflation factors of each item with regard to the other items of the respective construct are within parentheses {}.

The following indices were computed based on the construct formation as described above:
INITIATE = .389*IMEASURE + .379*ACQUISIT + .375*REGAIN
MAINTAIN = .283*MMEASURE + .340*RETAIN + .388*CROSS_UP + .267*REFERRAL
TERMINATE = .367*TMEASURE + .759*EXIT

Perceptual Performance (adapted from Jaworski and Kohli, 1990, Desphandé, Farley and Webster, 1993)
Relative to your competitors, how does your SBU perform concerning the following statements?
- Achieving overall performance.
- Attaining market share.
- Attaining growth.
- Current profitability.

Rated on a 7-point Likert format, labeled with "much worse – worse – a little worse – same level – a little better – better – much better".

CRM Compatible Organizational Alignment
With regard to your strategic business unit (SBU), to what extent do you agree to the following statements? We...
- have systematic training procedures for helping employees deal differently with high and low value customers.
- reward employees for building and deepening relationships with high value customers.
- our SBU is organized in a way to optimally respond to customer groups with different profitability.
- Organizing people (i.e., changing organizational structure) to deliver differentiated treatment and products to different customer segments presents a strength for our SBU.

Rated on a 7-point Likert format, anchored by "strongly disagree – strongly agree".

CRM Technology
With regard to your strategic business unit (SBU), to what extent do you agree to the following statements?
- We invest in technology to acquire and manage 'real time' customer information and feedback.
- We have a dedicated CRM technology in place.
- We have technologies that allow for one-to-one communications with potential customers.
- Relative to our competitors the quality of our information technology resources is larger.

Rated on a 7-point Likert format, anchored by "strongly disagree – strongly agree".