

**ANTECEDENTS AND OUTCOMES OF CUSTOMER RELATIONSHIP  
MANAGEMENT SYSTEMS**

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## **ANTECEDENTS AND OUTCOMES OF CUSTOMER RELATIONSHIP MANAGEMENT SYSTEMS**

### **ABSTRACT**

Customer relationship management (CRM) has in recent years, evolved into a technology-enabled business management tool for developing and leveraging customer knowledge to nurture, maintain, and strengthen profitable relationships. CRM can be employed to develop an ongoing dialog with customers integrated across all contact points. Customers stand to benefit from customized products and services and/or lower prices when firms put to productive use the better understanding of customers facilitated by CRM. Firms benefit from greater customer loyalty, and by being able to focus on profitable customers. CRM is definitely not a new concept. The academic marketing literature has strongly advocated that long-term orientation in their relationships with customers serves firms better than short-term transaction orientation. Several scholars have advanced convincing conceptual arguments in favor of this tenet and there is plenty of anecdotal evidence to support this contention while empirical evidence is limited and mixed.

Many firms have invested substantial resources to implement CRM systems and many others are in the process of doing so. Yet, the business press provides conflicting accounts about the viability and success of these CRM systems. Eventually, firms would judge these investments against their return-on-investment (ROI). In this environment, if a CRM system does not provide a firm with the expected ROI, we need to identify the root of the problem. This implies the need to conceptualize and measure the dimensions of CRM, and examine its antecedents and consequences. In this paper, we endeavor to do so, as this issue has not received adequate attention in the literature. The study would enable managers to assess CRM activities

and their outcomes in their organization. It will also contribute to the relationship management literature in marketing by shedding light on an issue that has not been examined by marketing scholars. Therefore, in this study we develop a conceptual model to examine CRM, and its antecedents and consequence (see Figure). The conceptual model will be empirically tested using data collected from users of CRM systems.

### **Data Collection**

Data is currently being collected from a sample of 1000 leading US businesses using a questionnaire survey. The questionnaire was developed based on a review of the extant literature and personal interviews with a sample of managers experienced with the implementation and usage of CRM systems. Two rounds of mailing have been conducted and currently an online survey approach is also being conducted to enhance response rate to the survey. To date, we have 57 responses. However, this is not sufficient to do the rigorous data analysis required to test our conceptual model. As such, we focus on providing some preliminary descriptive details on the various constructs in the model as well as some indications on how organizations are assessing and implementing CRM technology.

### **Preliminary Descriptive Data**

Of the firms that have so far responded to our survey, 30 percent have already implemented CRM while another 45 percent are in the process of doing so. Overall, the troubled economy has not had a major impact on the decision taken by these firms in implementing a CRM technology solution. While 65 percent of the firms suggested that the economy has had no impact on their decision to implement a CRM technology solution, interestingly, 27 percent suggested that it had accelerated their plans while only 8 percent stated that it diminished their emphasis on CRM.

### Assessment of CRM Outcomes

The firms that responded to our survey employed a variety of metrics to assess the effectiveness of CRM technology. Interestingly, only 31 percent had an ROI emphasis on CRM investment. The table shown below described the percentage of firms that assessed CRM outcomes along various metrics.

<b>Measure</b>	<b>Percent</b>
ROI	31.6
Customer Satisfaction	78.9
Customer Retention	36.8
Revenue per customer	31.6
Customer acquisition	42.1
Lowering transaction costs	26.3

Percentages sum to more than 100 due to multiple responses

As can be seen, organizations are predominantly prone to looking at customer satisfaction as the primary metric to assess CRM, with customer acquisition and retention as the next most widely used metric. This implies that the primary focus in organizations in deploying CRM technology is to enhance various customer level outcomes. While it is not our intention to suggest that ROI is not an important metric, the fact that only 31% of the firms that responded to the survey assess CRM technology using ROI suggests that organizations are, perhaps, taking a long-term orientation in assessing the financial viability of CRM technology.

### Constructs

The Appendix gives the preliminary results of factor analysis for the constructs depicted in the Figure. We would like to stress that given the small sample size the results should be considered as exploratory. Overall, the indicators have reasonable loadings and the reliability coefficients

(coefficient alphas) of the constructs are acceptable. Following is a brief discussion of each of the constructs.

***Customer Information Management:*** The use of CRM leads to customer information management that has six factors: information inflow, information outflow, information capture, information integration, information access, and information usage. This suggests that organizations focus on six aspects of information management. First, CRM involves effectively managing the inflow and outflow of information. Second, CRM allows the effective capture of customer data. Third, using CRM approaches, firms integrate customer information. Fourth, CRM is used to enable employee access to customer information as well as effective usage of the information. A factor analysis on correlations among these six factors resulted in one factor. That is, customer information management can be considered as second-order factor with six first-order factors.

***Customer Relationship Orientation:*** Customer relationship orientation, which refers to the propensity of an organization to focus on building and maintaining relationships with its customers, emerged as a unidimensional construct with acceptable reliability.

***Customer-Centric Managerial Processes:*** This construct measures the processes implemented by an organization to facilitate customer-focused behaviors in managers was captured by a unidimensional factor and also had acceptable reliability.

***Transaction Factors.*** Transaction factors, which refer to product and other customer related factors that necessitate frequent and elaborate interactions between the organization and the customer, comprised two factors. The first was a product related factor while the second one was a customer related factor.

***Environmental Factors:*** These consisted of two different aspects, one relating to uncertainty in the larger environment (environmental dynamism) and the other relating to intensity of competition.

***CRM Technology Resources:*** The extent to which technology was effectively employed for customer relationship management was measured by two factors, CRM technology usage and CRM technology design. CRM technology usage referred to the extent to which technology was used while CRM technology design referred to the extent to which the technology design kept organizational needs in mind.

***CRM Outcomes:*** CRM outcomes can be measured along a variety of dimensions such as customer response quality, customer response speed, customer response flexibility, customer satisfaction value, customer acquisitions, and performances with respect to customer retention and growth. Factor analysis on correlations among the CRM outcome factors loaded on one factor suggesting that CRM outcome is a second-order factor.

### **Preliminary Indications on Test of the Model**

Composite scores for each construct were computed by summing the indicators of the respective constructs. Correlational analysis on the data available to us suggests that the conceptual model is likely to be supported (see Table 1). Customer-related transaction factors influence a firm's customer relationship orientation. Customer relationship orientation is strongly correlated with customer-centric managerial processes. Customer relationship orientation and customer centric managerial processes are strongly associated with customer information management. The interaction of customer relationship orientation and both factors of technology resources have strong positive associations with customer information management. Customer information management in turn has a strong association with customer relationship outcomes. In summary,

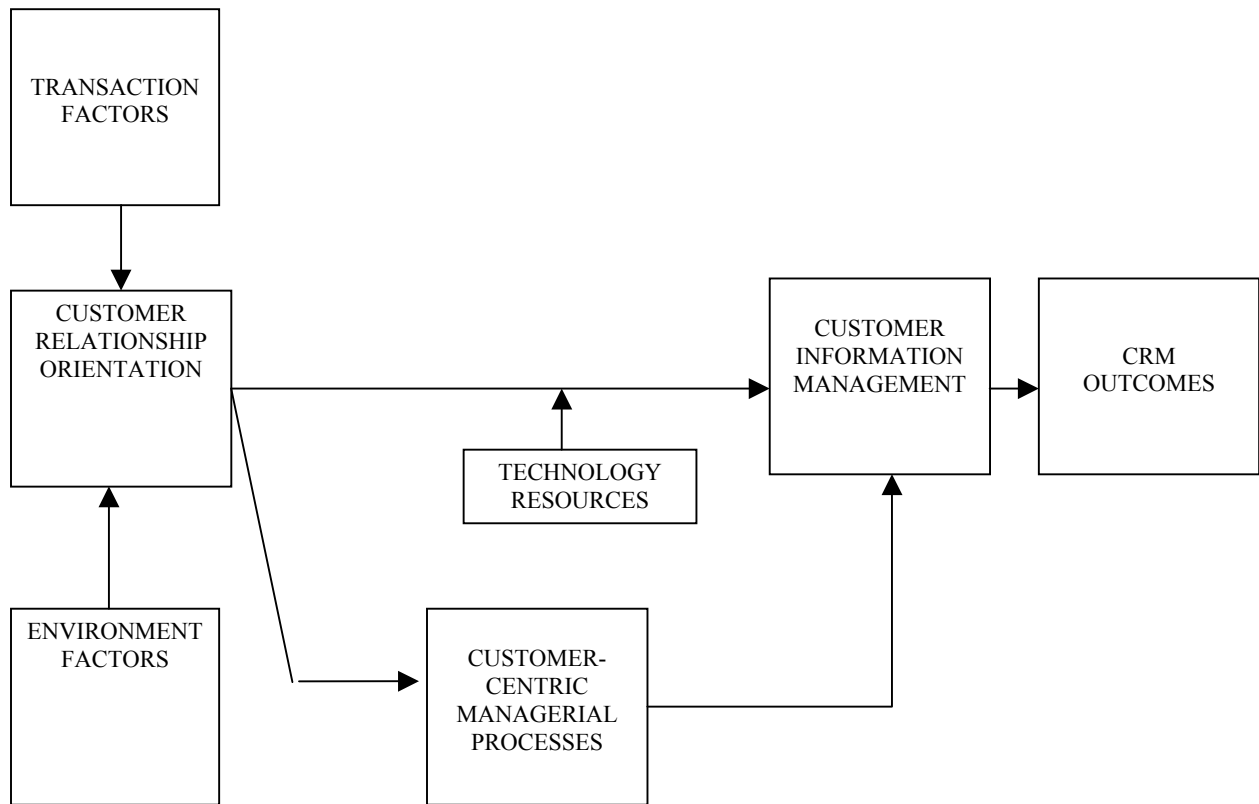
the conceptual model is supported by the available data. But we wish to highlight the fact these results are preliminary and arrived at with limited data.

**Table: Correlations**

<b>Dependent Construct</b>	<b>Independent Construct</b>	<b>Correlation</b>
CRM Outcomes	Customer Information Management	.611 (.004)*
Customer Information Management	Customer-Centric Managerial Process	.621 (.000)
	Customer Relationship Orientation	.407 (.000)
Customer Centric Managerial Process	Customer Relationship Orientation	.585 (.000)
Customer Relationship Orientation	Transaction Factors— Product Related	.012 (.932)
	Transaction Factors— Customer Related	.582 (.000)
Customer Information Management	Interaction of Customer Relationship Orientation and Technology resources (usage)	.589 (.008)
	Interaction of Customer Relationship Orientation and Technology resources (usage)	.565 (.012)

\*Values in parentheses are p-values.

**Figure: Conceptual Model**



**Appendix  
Factor Analysis Results**

<b>Constructs and their Measures</b>	<b>Loadings</b>
<b>Customer Information Management</b>	
<b>Information Inflow (r=.633)</b>	
We enable our customers to have interactive communications with us.	.795
We provide our customers with multiple ways to contact the organization.	.798
<b>Information outflow (r=.708)</b>	
We focus on communicating periodically with our customers.	.836
We maintain regular contact with our customers.	.844
<b>Information Capture (.780)</b>	
We collect customer information on an ongoing basis.	.902
We capture customer information from internal sources within the organization.	.744
We collect customer information using external sources (such as market research agencies, syndicated data sources, and consultants).	.424
The information collected from customers is updated in a timely fashion.	.602
We use customer interactions to collect information.	.613
<b>Information Integration (.828)</b>	
We integrate customer information from the various functions that interact with customers (such as marketing, sales, and customer service).	.722
We integrate internal customer information with customer information from external sources.	.549
We integrate customer information from different communication channels (such as phone, mail, e-mail, the Internet, fax, and personal contact).	.920
We merge information collected from various sources for each customer.	.787

Constructs and their Measures	Loadings
<b>Customer Information Management</b>	
<b>Information Access (.909)</b>	
In our organization, relevant employees find it easy to access required customer information.	.847
In our organization, relevant employees can access required customer information even when other departments/functional areas have collected it.	.805
In our organization, relevant employees always have access to up-to-date customer information.	.930
In our organization, relevant employees are provided the information required to manage customer relationships.	.811
<b>Information Usage (.878)</b>	
We use customer information to develop customer profiles.	.628
We use customer information to segment markets.	.725
We use customer information to assess customer retention behavior.	.591
We use customer information to identify appropriate channels to reach customers.	.645
We use customer information to customize our offers.	.649
We use customer information to identify our best customers.	.668
We use customer information to assess the lifetime value of our customers.	.646
We use customer information to develop new products.	.481
We use customer information to acquire new customers.	.750
We use customer information to cross-sell other products to existing customers.	.567
We use customer information to manage customer relationships.	.618

<b>Constructs and their Measures</b>	<b>Loadings</b>
<b>Customer Relationship Orientation (.835)</b>	
In our organization, retaining customers is considered to be a top priority.	.782
Our employees are encouraged to focus on customer relationships.	.895
In our organization, customer relationships are considered to be a valuable asset.	.883
Our senior management emphasizes the importance of customer relationships.	.804
We make marketing decisions based on customers' lifetime value.	deleted
<b>Customer Centric Managerial Process (.821)</b>	
We focus on customer needs while designing business processes.	.808
In our organization, employees receive incentives based on customer satisfaction measures.	.638
A key criterion used to evaluate our customer contact employees is the quality of their customer relationships.	.604
In our organization, business processes are designed to enhance the quality of customer interactions.	.721
We organize our company around customer-based groups rather than product or function-based groups.	.493
In our organization, various functional areas coordinate their activities to enhance the quality of customer experience.	.796

Constructs and their Measures	Loadings
<b>Transaction Factors</b>	
<b>Product complexity and value (r=.721)</b>	
We sell complex products and/or services.	.853
We sell high value products and/or services.	.851
<b>Customer Factors (.648)</b>	
In our business, products and/or services can be customized to meet specific customer needs.	Deleted
We sell products and/or services that are purchased frequently by customers.	.580
We sell multiple products and/or services that can be used by the same customer.	.720
In our business, it is possible to collect customer information relatively easily.	.495
In our business it is possible to communicate with end-users relatively easily.	.528
<b>Environmental Factors</b>	
<b>Environmental Dynamism (.772)</b>	
In our business, customers' product preferences change substantially over time.	.445
We are witnessing demand for our products and services from customers who never bought them before.	deleted
The technology in our industry is changing rapidly.	.791
Technological changes provide big opportunities in our industry.	.883
A large number of new product ideas have been made possible through technological breakthroughs in our industry.	.619
<b>Intensity of Competition (.931)</b>	
Competition in our business is cut throat	.863
We are in a business with very aggressive competitors.	.955
Price competition in this business is severe.	.903

Constructs and their Measures	Loadings
<b>Technology Resources</b>	
<b>Technology Usage (.849)</b>	
The technology systems we use for CRM in various departments are well integrated.	.576
The technology systems we employ for CRM are easy to use.	.958
Our employees are trained to use CRM technology effectively.	.848
Users of CRM systems are provided with the necessary technical support in our organization.	.732
<b>CRM Technology Design (.926)</b>	
CRM technology implementation in our organization used inputs from user departments such as marketing and sales.	.772
The CRM technology we use was designed to meet our business strategy needs.	.802
We have a clear understanding of what we want to accomplish from CRM technology.	.681
<b>CRM Outcomes</b>	
<b>Customer Response Quality (.914)</b>	
We provide high quality responses to satisfy the needs of customers.	.897
Even very demanding customers find our responses to be effective.	.937
We satisfy customers' needs through innovative responses.	.701
We have a reputation for meeting customers' needs effectively.	.893
<b>Customer Response Speed (.889)</b>	
We rapidly respond to our customers' needs.	.946
We provide fast responses to customers' changing needs.	.836
We provide quick responses to customer complaints.	.781
<b>Customer Response Flexibility (.933)</b>	
We quickly modify our responses to satisfy changing customer demands.	.851
We are flexible in our responses to customer needs.	.902
We quickly adapt our customer responses if their needs change.	.972

Constructs and their Measures	Loadings
<b>CRM Outcomes</b>	
<b>Customer satisfaction/value (r=.529)</b>	
Achieving customer satisfaction	.772
Providing value for customers	.666
<b>Performance--Retention</b>	
Keeping current customers	.856
<b>Performance—Growth (.781)</b>	
Attracting new customers	.446
Attaining desired growth	.951
Securing desired market share	.785
Securing desired financial performance	.567
<b>Customer acquisition (r=.811)</b>	
The CRM technology employed in our organization has enhanced our ability to acquire new customers.	.931
The CRM technology employed in our organization has lowered our customer acquisition cost.	.842