

## The Evaluation Process of CRM Systems: A Review of the Literature

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**Abstract:** *Integrated CRM systems are implemented by enterprises worldwide as a means to enhance performance and remain competitive. However, it seems that CRM software, regarded as the primary manifestation of the customer-centric strategy of most organizations does not deliver up to expectations, as a high rate of failure has been reported in the literature. Therefore, the evaluation of CRM systems is of paramount importance but at the same time it is a complex and difficult task. This paper reports a review of the literature on CRM evaluation. The findings suggest that a variety of models, approaches and techniques have been proposed but there is a lack of agreement concerning the relative value of important factors that should be considered in the evaluation process of CRM systems. Future research should empirically examine successful implementations of CRM evaluation projects in order to provide insights and guidelines useful to both researchers and organizations.*

**Keywords:** *CRM systems, CRM evaluation, customer relationship management*

### 1. INTRODUCTION

Competitive pressures and globalization forces enterprises all over the world to try to enhance their performance and their competitive standing. In order to accomplish this task, amongst other initiatives, new strategies are adopted. Customer relationship management (CRM) (Kim et al., 2003, Stefanou et al., 2003) is a wide-spread customer-centric strategy, which is regarded as “the consistent organizational activity under usage of integrated selling, marketing and service strategy” (Kalakota and Robinson, 1999). Moreover, as it has been argued by earlier works, the fundamental target of CRM, from the aspect of marketing, is to fit the customer’s requirement in order to build a long-term customer relationship (Ryals and Payne, 2001). However, although CRM projects cost a lot of money and require huge investments in technology, time and human capital, they have not always delivered the expected results (Friedrich et al., 2010; Caldeira et al., 2008; Grabner-Kraeuter et al., 2007; Rigby et al. 2002). A substantial number of studies argue that the advantages offered by CRM applications are numerous but at the same time, the failure percentage of their implementation seems to be relatively high (Finnegan and Currie, 2010; Mendoza et al., 2006; Esteves and Pastor, 2001). This fact renders the evaluation of CRM systems crucial.

The evaluation process of CRM software is a difficult task as it needs a full and consistent examination of many factors. According to previous studies, a framework is needed, including a software selection methodology, an evaluation technique and an evaluation criterion in order to support software package evaluation process (Jadhav and Sonar, 2009). As far as an evaluation framework is concerned, it seems that there is not a high level of agreement among researchers. Usually, researchers adopt a Balanced Scorecard (BSC) approach when both financial and non-financial measures are considered (Kim, 2009; Kim et al. 2003; Reichold et al., 2003; Ang and Buttle, 2002; Kaplan and Norton, 1992). On the other hand, a great deal of different frameworks such as Winer’s Framework, Rafaeli Framework (Behaviors-based), Structural equation model (SEM) and CRM benefits framework have been used by several researchers as well (Kim et Kim, 2009; Shanks, 2009; Grabner et al., 2007; Torres et al., 2007; Kim et al. 2003; McCalla et al, 2002). These evaluation methods, techniques, frameworks and approaches are examined in this paper, which is organized as follows: Section 2 describes the definition and potential benefits of CRM systems. Existing CRM evaluation models are described in Section 3, based on a review of previous academic research within the area. The findings of the literature review are discussed in Section 3. Finally, in the last section of our review, emerging issues in the area of CRM evaluation and directions for future research are presented.

### 2. CRM - MULTIPLE INTERPRETATIONS

It can be argued that a potential reason for the high failure implementation percentage of CRM applications is its multiple interpretations. As Grabner-Kraeuter et al. (2007) mentioned “the term CRM has come to mean many things to many people”. What we should do is to see CRM from different perspectives and give different definitions. A process oriented definition refers to creating and nourishing relationships with other marketplace parties (Srivastava et al., 1999). CRM as a philosophy aims to satisfy customers with ultimate goal to reach customer loyalty and retention. CRM as a strategy refers to the creation, development and enhancement of individualized customer relationships with carefully targeted customers. Moreover, according to the functional perspective, CRM is a firm wide adoption and not just a limited IT solution. As a

conclusion we could say that two different fields of research constitute the basis of CRM: 1) relationship marketing and 2) sales force automation, data warehousing and data mining.

One could think that the benefits of a CRM adoption can vary from business to business due to different processes and technologies. The truth is that despite the multiple goals of dissimilar firms CRM benefits do not vary so much (Reinartz et al., 2004). Benefits that are mentioned in the relevant literature are really a lot: improving the relationship with individual customers, enhancement of the quality of communication across multi selling channels, improvement of sale force efficiency and effectiveness, customisation of products and services, improvement of the quality of customer services, improvement of pricing strategy, cost reduction, more profit and others. Taking all these potential advantages under consideration we all understand the great importance of a truly intergraded CRM evaluation.

### 3. CRM EVALUATION MODELS

Despite the great popularity of CRM systems there is no totally accepted evaluation method. However, authors recommend not using a single indicator to measure the results of CRM implementation. As a result there are a lot models that use a two-dimensional measurement scale in order to include financial performance and market performance.

Kim et al. (2003) realized that in order to evaluate a CRM system they had to measure intangible benefits of CRM such as customer loyalty, service quality, competitiveness, trust, efficiency and innovation of operation. The financial or accounting techniques are not able to evaluate benefits that are not yielded yet or benefits that are intangible. On the other hand, multi-criteria methods are capable of solving this problem but they “have the difficulty in making consensus on scores” (Lycett et Giaglis, 2000). Balanced Scorecard (BSC) is the evaluation tool that does the job since it can defeat the drawbacks mentioned above.

The Balanced Scorecard (BSC) concept was devised by Kaplan and Norton (1992). The innovative feature of that framework was the inclusion of not only financial but also operational measures such as customer satisfaction, internal business process, and innovation and learning. As a result BSC gives information from four different perspectives, financial perspective, customer perspective, internal perspective and innovation and learning perspective.

However, CRM evaluation needs a customer-centric philosophy. The classic BSC perspectives were replaced by four new perspectives; customer knowledge, customer interaction, customer value, and customer satisfaction in order to reflect that philosophy. Customer knowledge (CK) stands for understanding customer needs and customer profiles using the new technology which is crucial for achieving customer satisfaction through the improvement of management processes. Customer interaction (CI) refers to the management of the customer services and management processes of the firm. Ultimate goal of that management is the operational excellence. Customer value (CV) embodies the benefits that a company gains from a customer. It can be used also as an identifier for each customer, which determines customer treatment. Finally customer satisfaction (CS) represents the level of satisfaction a customer gets and defines if they will become permanent or not.

In order these four perspectives to be evaluated some metrics are necessary. Under the assumption that the company uses its web site as a CRM tool the metrics for CK are Customer acquisitions (No.), Number of customers (No.), Page views per day (No.), Visits per day (No.), Net sales/employee (%), Technological capacity (No.), Frequency of hardware upgrade (No.), R&D investment (\$), Customer profile research (\$), Security level (%) and so on. The metrics for CI include Marketing campaign (No.), Total cost for promotion (\$), Frequency of contents update (No.), Number of payment methods (No.), Number of response channel to customer inquiry (No.), Total cost for managing channel (\$), Avg. delivery time after order fulfilment (No.), Response time to customer inquiry (No.) and so forth. Moreover metrics for CV are Number of retained customers (No.), Profits increase Net sales (\$), Ordinary sales (\$), Asset/employee (\$), Profit/employee (\$), Channel interface. Finally, metrics that were used for CS are the number of customer complaints, response times, and mean time to resolve issues, the number of contacts executed before achieving problem resolution, and the percentage of complaints that were successfully resolved.

This CRM evaluation technique and the model Kim et al. (2003) suggested were applied to an online shopping company in Korea. Data, such as revenue, sales, cost, and site traffic, were collected for two periods, from February 2002 to April 2002 (period I), and from August 2002 to October 2002 (period II). Since the results of BSC were analyzed managers of the company took some actions. As a result CRM activities were improved as well as the four BSC perspectives.

Ang and Buttle (2002) also refer to BSC while they are trying to find out the CRM performance indicators. They suggest that financial (Return on Assets (ROA), Earnings Before Interest and Taxes (EBIT)), customer (No of customers, customer value), process (customer acquisition cost) and people (percentage cross-trained, employee satisfaction) indicators should be used and that there is a cause-effect connection between the financial and the customer, process, people results of a company.

In addition, BSC is chosen by Reichold et al. (2004). According to them in order to measure the performance of a CRM system you “can either focus on calculating the monetary benefit of CRM investments, or on measuring and managing the success of CRM activities and processes”. The monetary benefit of CRM can be calculated using the CRM Value Metric method as Selchert (2004) argued. Selchert developed that method and measured the cash flow ROI of 35 projects. As far as

the success of CRM activities and processes are concerned BSC can be used. The advantage of that framework is that it can be customized to fit various requirements.

Kim and Kim (2009) adopt the resource-based view as a theoretical approach and the BSC approach as a typological framework. Their aim is to build a CRM performance measurement framework which is called CRM scorecard. In order to build it they follow a series of 5 steps. First of all they construct a causal map and a hierarchical map using the existing literature and contacting corporate, then they combine those maps and develop measurement instruments and finally they prioritize CRM success factors. The four perspectives of CRM scorecard and the measures that were used are showed below in Table 1.

**Table 4: CRM scorecard framework**

Perspective	Component	Measures
Organizational performance		
	Shareholder value	SHV
	Profitability	ROA, ROI, Net sale (\$), Net sales/employee
	Customer equity	Customer equity, CLV, Profit/customer
Customer		
	Customer loyalty	RFM
	Customer satisfaction	Satisfied customer ratio (%)
	Customer value	Customer complaints (#)
Process		
	Customer acquisition	Leads per channel, acquisition (#), visits of web (#), win-back (%), profitability of new customer, response rate, sales success rate (hit ratio), prudent contact rate
	Customer retention	Response time (wait time), complaints resolved on 1st call (%), retention rate (%), delivery time, customer churn rate, reject rate by delivery, trouble tickets cleared
	Customer expansion	Share of wallet (%), core customer ratio (%), cross/up-sell rate, value per order
Infrastructure		
IT	CRM technology	Technological capacity for 3 types of customer info.(#), IT sufficiency, customer info. accuracy (%), customer info. integration (%), system stability
Human capital	Employee behavior	Human capital readiness (%), job efficiency (time per job, calls handled per call center staff (Sales rep coverage)), profit per emp., rate of satisfied serviced-customer
	Employee satisfaction	Key employee turnover
	Management attitude	
Strategic alignment	Training	Training days/employee
	Reward system	
	Organizational structure	Improvement in diversity profile
Organizational culture	Partnership	Vendor diversity
	Market orientation	Frequency of customer survey, customer knowledge creation (#)
	Explicit goal	

Source: Kim and Kim (2009), p. 483

According to Kim and Kim (2009) there are some crucial factors that a researcher should follow in order to build such a measurement framework. First of all the most important element of a measurement system should be the customer perspective, the second is the casual map, the third is the existence of different evaluative perspectives and the last one is the fact that antecedent or conditional factors should be measured.

CRM scorecard was used in a case study with a major retail bank in Korea and proved to be able to identify strengths and weaknesses of a company's CRM strategy.

BSC is the basis for another CRM performance measurement technique, CRM-SEM (System for CRM-Excellence Measurement framework). It is presented by Grabner-Kraeuter et al. (2007) and offers a holistic estimation of the return on CRM-related investments. It is actually based on the three main instruments: Benchmarking, Balanced Scorecard, and the Simulation of Scenarios. Benchmarking is the process of comparing one's business processes and performance metrics to industry bests and/or best practices from other industries. A crucial point in Benchmarking is the selection of the benchmarking partners. They must not be the market leaders, but they have to be leaders in certain CRM relevant processes according to Grabner-Kraeuter et al. (2007). According to Balanced Scorecard, the four perspectives that are used are

financial, customer value, processual and organizational perspective. As far as Simulation of Scenarios is concerned, two scenarios can be analyzed; in the first scenario no additional investment in customer relationship activities is done but in the second scenario there are CRM investment and activities. Grabner-Kraeuter et al. (2007) conclude that there is no best way to monitor CRM performance but CRM-SEM achievement is that it combines different measures, several frameworks and methodologies which give us different perspectives of CRM performance.

SEM was also used by Joo et Sohn (2008) in order to break down the structural relations among content quality, service quality, and provider quality in digital contents industry. Although the growth of this industry is expected to be rapid, the forecast of the re-purchasing rate is not so optimistic. As a result the improvement of customer satisfaction is very important and the factors that affect customer satisfaction are content quality, service quality, and provider quality. They concluded that the content efficiency, service responsiveness, and service stability are crucial factors in relation to customer's satisfaction and that the reliability of supplier has an indirect effect.

One of the main attributes of CRM systems is multidimensionality. Wang (2012), admitting this CRM attribute, adapted the 18-item CRM scale developed by Sin et al. (2005) in order to perform a CRM evaluation in hospital-based and privately run nursing homes in Taiwan. According to Sin et al. (2005), CRM consists of four elements which are key customer focus, CRM organization, knowledge management, and technology-based CRM. Key customer focus refers to the creation of special offerings in order the value of key customers to increase. CRM organisation refers to changes in organisational structure in order the ultimate goal, the creation of strong customer relationships, to be achieved. Changes must be done in resource allocation and human resource management as well. Technology-based CRM emphasises the technology which is needed in order to build those strong customer relationships. Finally, knowledge management refers to the way the knowledge must be created, transferred and applied for the customers to be served. It is called 18-item CRM scale because four items are used in order to measure key customer focus and knowledge management while five items are used for CRM organisation and technology-based CRM.

The common belief of the authors mentioned so far is that measuring just financial performance is not enough for the evaluation of a CRM initiative. Any measure of results must also include the perspective of the customers (Chang et al., 2005). Garrido-Moreno and Padilla-Meléndez (2011) being enthusiast of that idea decided to adopt a “bidimensional” approach for measuring the results of a CRM implementation. This approach, which includes financial perspective and marketing perspective, was proposed by many authors, such as Chen et Ching, (2004), Li (2001) and Sin et al. (2005). Financial perspective measures how profitability and costs of a company are affected and marketing perspective measures the created customer value.

A slightly different perspective for evaluating a CRM system is proposed by Shanks et al. (2009). According to their point of view we can “*determine the success or failure of CRM system implementations in terms of benefits realisation*”. Shanks et al. (2009) present a framework which first identifies and categorizes CRM benefits and then provides indicators and metrics for each benefit. A great number of enterprise software systems benefits are available in past research papers but they wanted a framework specifically focused on CRM system benefits so they concluded with 14 benefits divided into three levels of management; operational, tactical and strategic level. They are displayed in table 2.

**Table 5: CRM System Benefits Framework**

<b>Benefits for Operational Level of Management</b>
1. Improved customer data management
2. Improved process management
3. Improved customer service
4. Empowerment of staff
5. Improved productivity
6. Enables real-time responsiveness to trends
<b>Benefits for Tactical Level of Management</b>
1. Facilitates market segmentation
2. Facilitates key account management
3. Improved channel management
4. Improved analysis, reporting and forecasting
<b>Benefits for Strategic Level of Management</b>
1. Improved customer satisfaction
2. Improved business performance
3. Improved value-added partnerships
4. Improved innovative use of CRM systems

Source: Shanks et al. (2009), p. 268

It is mentioned that this framework can constitute the basis for both “post-implementation review of CRM systems and for establishing benchmarks for effective CRM system implementation”. In both cases it is very important to be aware of all the benefits of a CRM system including some that can be characterized as unplanned.

Continuing the presentation of CRM evaluation frameworks we should mention the framework used by Torres et al. (2007). It is based on Winner's (2001) framework which was built in order to conceptualize a CRM program. Combining this framework, previous research work and their own ideas they concluded with eight areas a CRM program consists of: 1) objectives of the CRM program; 2) types of customer data collected/available; 3) uses of customer data for managerial decision-making; 4) the firm's approach to market; 5) tactics used to develop and maintain relationships with customers, 6) the information technology infrastructure currently in use, 7) CRM performance and 8) CRM challenges. They created three groups of agribusiness using cluster analysis (Leaders, Emerging Leaders, and Underachievers) and tried to find their differences across the eight areas mentioned above. The conclusion were that what is needed for a successful agribusiness CRM program is to set ambitious objectives, to collect sophisticated data about the customers, to use that data for making decisions, and to make the best use of collected data in information systems/databases.

McCalla et al. (2004) presents a totally different idea. They argue that the user acceptance and generally use of CRM systems is a major factor as far as the failure of CRM to meet expectations is concerned. They also argue that *"the use of mandatory CRM systems is likely to have an important impact on service encounters where emotions play a large part"*. As a result they decided to use an evaluation framework which looks beyond the traditional measures of CRM benefits. It is an expansion of Rafaeli and Sutton's (1989) general framework of emotional expression within organisations. The goal is to evaluate CRM systems from a behaviours and emotions perspective. Such a framework can be used not only for ex post but also for ex ante CRM evaluation in order to lead to a "more humanistic design and application of CRM IS in the service encounter".

Friedrich et al. (2010) evaluated the existing literature of CRM evaluation and combined their findings in order to develop the CRM evaluation approach. According to that approach the first step is to determine the functional processes and system requirements. Then the criteria must be determined (criteria on functional requirements, costs and quality criteria) reflecting the nature and the purposes of the system (Farbey et al. 1992). The evaluation technique that is proposed is AHP. AHP breaks a problem down and aggregates the solutions of all the created sub-problems into a final solution. Main parts of CRM evaluation approach is the belief that CRM strategy must be synchronized with the strategy of the company, the importance of business processes and human factors and the largest part of the used criteria focus on CRM aspects and not on cost as it usually happens at IT evaluations.

We should not forget that successful customer relationships are the goal of the adoption of a CRM system. Keeping that in mind, Zinnbauer et Eberl (2005) argue that it is the customers' perspective that counts. Customers do not care about the internal features of a CRM implementation; they evaluate how those systems serve them better. As a result Zinnbauer and Eberl (2005) decided to develop a CRM measure that focuses on that direction. So, without paying attention to corporate efficiency, they concluded with three core capabilities that are prerequisites for stable customer relationships: interaction between the company and customer, the product and service range (customer offer) and the perceived consistency of the interactions with the company. Customer interaction refers to a series of verbal and nonverbal communication with selected customers. Customer offer stands for "the availability of a customized and individually tailored offer" (Day, 2000). Finally, Consistency of Interaction Channels refers to the company's knowledge of its customers which is concerned as a crucial company capability since it leads to the ability to deal with customer requests. Zinnbauer and Eberl (2005) decided to adopt a scoring approach using weight factors for their indicators as Moore et Baker (1969) did. They tested their measurement tool in the automotive industry of Germany and according to the results all the automobile providers have a great performance as far as the customer offer is concerned but some of them have not achieved an understanding of their customers' needs.

#### 4. CONCLUSION

Measuring CRM performance has been discussed in the literature by academics and practitioners in recent years. In this paper we presented an overview on the latest research on CRM evaluation processes which could be a useful basis for other researchers in this field. Extant literature reports a wide variety of models and approaches, a fact implying the complexity of CRM evaluation. The key point of CRM performance measurement is for the company to identify the factors which are important for performing CRM strategy. CRM strategy must be synchronized with the overall strategy of the company and that business processes as well as human factors must be taken under consideration. Organizational performance cannot be enhanced by just adopting a CRM system. Companies must decide what areas they are interested in and take advantage of CRM strengths. There is also a need to integrate various enterprise resources to perform CRM successfully (Kim and Kim, 2009).

An integrated framework for CRM evaluation could be used not only as a technique for assessing existing CRM adoptions but also as an organizational guideline for future CRM implementation. As it was mentioned before, despite the fact that there is no a totally accepted evaluation method, there is a possibility that the combination of the features of all these existing technique could lead to a holistic method that under some customizations could measure accurately the performance of a CRM implementation. Future research could empirically examine successful implementations of CRM evaluation projects in order to provide insights and guidelines useful to both researchers and organizations.

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