Investigating Factors that Affect CRM Success with Using Structural Equation Modeling (Case Study: between Staffs in Isfahan R&D Scientific Small City)

Davood Karimzadgan Moghadam
Department of IT & Computer Engineering, Payame Noor University, P.O.Box: 19395-4697, Tehran, Iran

Davood Vahdat
Department of IT & Computer Engineering, Payame Noor University, P.O.Box: 19395-4697, Tehran, Iran

Rahebeh Arfarafiei
MSc student of IT management, Department of IT & Computer Engineering, Payame Noor University, P.O.Box: 19395-4697, Tehran, Iran

Abstract

Customer relation management systems can help organizations to gain the potential new customers, promote the existing customers’ purchase, maintain good relationship with customers as well as to enhance the customer value, thus can improve the enterprise images. Moreover, the development and applications of CRM systems have also been considered as important issues for researchers and practitioners in recent years. The main purpose of this study is to explore impact of organizational variables and CRM experience on CRM success. In this study, Structural Equation Modeling (path analysis and confirmatory factor analysis) has been used for data and hypotheses analysis. The results indicate that organizational variables have significantly effect on CRM success. In fact, organizational variables are found critical from the employee' point of view.

Keywords: CRM success, organizational variables, CRM experience

Introduction

Customer relationship management (CRM) has been widely regarded as a process related to building and retaining customers through better interaction and service. Changes in the type of customers, their behavior and response to the product manufactured are likely to have immediate effect on the performance of a company and also have implications for decision making relating to strategy setting for improving the relationship with customers in the future. It is recognized that not every customer is equally important to an organization in terms of his/her lifetime value, thus, customers need to be segmented in order to identify strategically important customers. (Jutla et al, 2001) describe CRM as acquiring, analyzing and sharing
knowledge about and with customers. (Bueren et al, 2004) is of opinion that CRM aims at leveraging investments in customer relation to strengthen the competitive position and maximize the returns. The reason for the attrition of the customer needs to be identified and effective measures to be taken to solve the problem. This requires information about customers’ preferences and behavior patterns. Customer Relationship Management is a broad term for managing business interactions with customers for improved relationship and loyalty.

Effective CRM is about acquiring, analyzing and sharing knowledge about and with your customers for the quick and timely service to the customer. CRM provides an integrated view of customer interactions starting with software applications that capture these interactions and with the effective analyses of the data to reveal the hidden and important information required for improving the relationship of firms with the customers. The core idea of CRM rising in recent years is to view customers as the most important resource of companies. By deep customer analysis, retailers can satisfy the demand of their customers and realize the maximization of benefits. (Ceolin, 2000) examines about customer Relationship Management (CRM) as a business strategy that utilizes the power of technology to tie together all aspects of a company’s business with the goal of building long-term customer loyalty. (Goodhue et al, 2002) explores business benefits through CRM. Customer relationship management (CRM) is a symbol of information and modernization of enterprise management.

**Hypothesis**

Kalakota and Robinson (1999) considered that customer relationship management (CRM) can be seen as the consistent organizational activity under usage of integrated selling, marketing and service strategy. That is, trying to define the real need of the customer, by the enterprise integrating various process and technology, in asking internal product and service improvement, in order to dawn effort of enhancing customer satisfaction and loyalty.

In 2001, they also offered the concept of CRM system to synthesize with functions of sales, customer service, and marketing activity, all based on customer orientation. The same idea also served as the developmental foundation of CRM system upgrades in the present (Kalakota & Robinson, 2001).

The benefits of CRM implementation not only can assist the enterprise to locate the profitable market (or business opportunity), but it also improves the competitive advantage, through lowering cost and gaining higher customer value, in comparison with the competition. However, a real successful CRM should integrate information technology (such as basic installation, applicable system, etc.), information resource (such as customer data base, interview record of salesman, well interaction with customer, and soon), as well as organizational resource (for example, customer-oriented business culture, etc.); all these can actually exert the best effectiveness (Pushkala, Michael Wittmann, &Rauseo, 2006).

CRM makes changes in a company and in business processes (Sin et al., 2005), for using CRM successfully organizations need to reorganize their structures and their value chain to the
demand (Garrido-Moreno, 2011, Kotorov, 2002). The organizational structure, the strategy and the business processes all need to be changed to using CRM, since success in the initiative will depend on creating the right synergy between technological systems, processes and people (Xu & Walton, 2005). Also human factor is very important, even with the clear defined processes and the high technology the relation between people still has a determinant role in the using of any business strategy (Mendoza, Marius, Pérez, & Grimán, 2007). This is why factors such as employee skills and training and the establishment of appropriate reward systems will be important in employees’ involvement in implementing this type of strategy. On the other hand, the organizational culture will play a key role also in KM: the vision of the organization, rules, structure and reward system are direct determinants of the transmission of knowledge within the company (Racherla & Hu, 2006), and therefore have a direct effect on the successful implementation of an initiative of this type.

H1: Organizational variables have impact on CRM success.

H1a: Leadership has impact on CRM success.

H1b: Organizational structure has impact on CRM success.

H1c: Employees has impact on CRM success.

The benefits of CRM implementation not only can assist the enterprise to locate the profitable market (or business opportunity), but it also improves the competitive advantage, through lowering cost and gaining higher customer value, in comparison with the competition. However, a real successful CRM should integrate information technology (such as basic installation, applicable system, etc.), information resource (such as customer data base, interview record of salesman, well interaction with customer, and soon), as well as organizational resource (for example, customer-oriented business culture, etc.); all these can actually exert the best effectiveness (Pushkala, Michael Wittmann, & Rauseo, 2006).

Systems offer many benefits to organizations, since they consider a single view of the customers, manage the relationships with customers in an integrated way regardless of the communication channel used, and help the firm improve the efficiency and effectiveness of the processes involved in customer relationships. CRM implementation involves a substantial change in both business processes and in the organization itself, is therefore essential to carry out a proper organizational change management (Shum, Bove, & Auh, 2008). In this sense (Selander, 2006) highlights that in applying a new technology in an organization, both the management processes and the structure, culture and organizational routines experience a profound change, which affects the entire organization. Therefore, organizational learning and experience in the development and implementation of the strategy can also determine the effectiveness of it.

Likewise, Campbell (2003) deepened into the internal processes of organizational learning that involves implementing CRM. In this learning process there are four transformations that are
particularly relevant: the process of acquiring information about customers; the integration of marketing and IT functions; the involvement of senior management and the employees’ evaluation and compensation system. Since these transformations are developed gradually, it is logical that as more time elapses since the beginning of the implementation of the strategy, the required organizational learning will be taking place. Moreover, Hart, Hogg, and Banerjee (2004) analyzed empirically the effect of the level of experience in CRM in the effectiveness of it, from the perspective of organizational learning. They noted that the use of and experience in CRM improved the company’s ability to obtain effective results with this initiative, increasing productivity and benefits of CRM with increasing time since its implementation. Consequently, we propose the following hypothesis:

H2: CRM experience has impact on CRM success.

Methodology

Current study is descriptive-survey based on methodology and research-applied based on the goal. Since this study examines the impact of CRM experience and organizational variables on CRM success, it is practical based on the goal. Descriptive statistics was used for analyzing descriptive data and structural equations model was used for testing hypotheses with the help of SPSS and Amos software.

To collect literatures, English and Persian papers, journals and available books were used. Questionnaire was used to collect data. It should be noted that a standard questionnaire of was used. All questions were classified on a scale range of five-option Likert (from completely disagree = 1 to completely agree = 5). The questionnaire had two parts of demographic questions including age, gender, education, and the organizational position.

Validity and Reliability

The concept of validity answers to this question that to what extent measuring instrument gauges the desired option. Data accuracy cannot be reliable without knowledge of the validity of measuring instruments. There were several methods such as content validity method for validation. If questions represent special characteristics and skills which a researcher wants to measure, the test will have content validity. In this stage, the necessary corrections about the research made during different interviews with experts and professors; therefore, it ensured that questionnaire measure the desired option.

Reliability is one of technical features of measuring instruments. This shows that measuring instruments to what extent obtains the identical results in the same situation. To determine the validity of the test, Cronbach's alpha was used. It is used to calculate the internal coordinating of measuring instrument that measure different feature. Therefore, reliability coefficient with Cronbach’s alpha was calculated using data Obtained from questionnaires and SPSS software. Cronbach's alpha coefficient of organizational variables (0.81) and CRM experience (0.85) were
obtained. These numbers indicates that the questionnaire had reliability. The 90 questionnaires distributed between staffs in Isfahan R&D scientific small city.

Analysis of the structural model

We assessed the overall goodness-of-fit using the chi-square test. The chi-square test assesses the adequacy of a hypothesized model in terms of its ability to reflect variance and covariance of the data. Due to its tendency to be sensitive to sample size, other fit indices (e.g., GFI, AGFI, CFI, NFI, and RFI) were considered in conjunction with the chi-square. For the statistical significance of parameter estimates, t values were used. The results of structural equation modeling obtained for the proposed conceptual model revealed ratio of chi-square to the degree of freedom( _2/df)_ of 1.92(_p < 0.05_), goodness-of-fit index (GFI) of 0.94, adjusted goodness-of-fit index (AGFI) of 0.90, comparative fit index (CFI) of 0.93, and root mean square error of approximation (RMSEA) of 0.05. Generally, fit statistics greater than or equal to 0.9 for GFI, and CFI indicate a good model fit (Bagozzi, Yiand Phillips, 1991). Furthermore, RMSEA values ranging from 0.05 to 0.08 are acceptable; therefore, the RMSEA suggested that our model fit was acceptable. Other fit indices, indicated that our proposed model obtained an adequate model fit

Table 1: Overall index of proposed model

<table>
<thead>
<tr>
<th>Index</th>
<th>Organizational variables</th>
<th>CRM experience</th>
<th>CRM success</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMIN</td>
<td>12.309</td>
<td>50.394</td>
<td>26.28</td>
</tr>
<tr>
<td>DF</td>
<td>8</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>P</td>
<td>0.138</td>
<td>0.05</td>
<td>0.25</td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>1.539</td>
<td>1.445</td>
<td>2.61</td>
</tr>
<tr>
<td>RMR</td>
<td>0.057</td>
<td>0.032</td>
<td>0.014</td>
</tr>
<tr>
<td>GFI</td>
<td>0.971</td>
<td>0.939</td>
<td>0.954</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.924</td>
<td>0.886</td>
<td>0.892</td>
</tr>
<tr>
<td>TLI</td>
<td>0.960</td>
<td>0.954</td>
<td>0.951</td>
</tr>
<tr>
<td>CFI</td>
<td>0.979</td>
<td>0.771</td>
<td>0.912</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.035</td>
<td>0.029</td>
<td>0.035</td>
</tr>
</tbody>
</table>

Table 2: Overall index of path analysis

<table>
<thead>
<tr>
<th>Index</th>
<th>CMIN</th>
<th>DF</th>
<th>P</th>
<th>CMIN/DF</th>
<th>RMR</th>
<th>GFI</th>
<th>AGFI</th>
<th>TLI</th>
<th>CFI</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>2.133</td>
<td>2</td>
<td>0.344</td>
<td>1.066</td>
<td>0.006</td>
<td>0.993</td>
<td>0.949</td>
<td>0.997</td>
<td>0.999</td>
<td>0.023</td>
</tr>
</tbody>
</table>
A structural equation modeling (SEM) approach was adopted in our data analysis (Bagozzi et al., 1991). Fig. 2 and 3 presents the results of the structural model. CRM success in this study was jointly predicted by CRM experience ($\beta = 0.75$, Standardized path coefficient, $p<0.05$) and organizational variables ($\beta = 0.88$, $p < 0.05$). As a result, all Hypotheses were supported.
Table 3: The result of hypotheses testing (regression weights)

<table>
<thead>
<tr>
<th>hypotheses</th>
<th>Description</th>
<th>Estimate</th>
<th>C.R.</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Organizational variables ---&gt; CRM success</td>
<td>0.88</td>
<td>8.703</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>CRM experience ---&gt; CRM success</td>
<td>0.75</td>
<td>7.873</td>
<td>0.000</td>
</tr>
<tr>
<td>3</td>
<td>Organizational Structure ---&gt; CRM success</td>
<td>0.30</td>
<td>5.02</td>
<td>0.012</td>
</tr>
<tr>
<td>4</td>
<td>leadership ---&gt; CRM success</td>
<td>0.92</td>
<td>8.92</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>Employee ---&gt; CRM success</td>
<td>0.04</td>
<td>1.25</td>
<td>0.50</td>
</tr>
</tbody>
</table>
Discussion

From the empirical study, organizational variables fit positively affects CRM success. It can be seen that the organizational variables can handle business issues for user; thus, the user is more willing to use it. This presumption fits the idea of Goodhue and Thompson (1995), also the two factors have demonstrated significant positive correlation. This study was set out to explore the factors affecting CRM success. CRM experience also had a direct effect on CRM success, so the hypothesis H2 was confirmed. In this sense, Hart et al. (2004) empirically analyzed the effect of the level of CRM experience on the effectiveness of the strategy from an organizational learning perspective. Similarly to us, they found that using CRM and having experience in the strategy improve the firm’s ability to obtain effective results from this strategy, and that productivity and the benefits of CRM increase the longer firms have been using the strategy. For final results, the following factors were detected, Whether or not the user feels the CRM system is helpful or not in doing the job; whether or not the system is easy to use, what exactly will be profitable conditions in the environment; whether or not each task can benefit each other, etc. Such were all key factors to influence CRM success. Followings are descriptions of the limitations encountered for this research.

Overall representation and stability may not be sufficient, since the authors acquired CRM user data from only some companies in Isfahan city. This research model is synthesizing two variables. Therefore, except for CRM, this model may be employed for other relative researches, in order to observe differentiations between acceptance and behavioral intention in relevance of using various information systems. For future researches, the authors could also combine with other theory, or expand research scope, in order to experience with broader references and directions. For future researches, the authors can use another industry, which can be explored and compared.

References


