Analysis of Relationship between Knowledge Management and Customer Relationship Management with Customer Knowledge Management (Case Study At Azaran Valve Co.)

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Abstract

Knowledge management (KM) and customer relationship management (CRM) are both emphasized on the allocation of resources to business supportive activities in order to gain competitive advantages. Merging the two concepts of knowledge management and customer relationship management in customer knowledge management (CKM) model can promote the benefits of employing each of them and reduce the risk of implementation failure. This study sought to analyze the relationship between knowledge management and customer relationship management with customer knowledge management. The proposed research model has been provided using customer knowledge management literature. To test the model and the research assumptions, a closed response questionnaire was designed and distributed among managers and employees of Azaran Valve Co. After data collection, structural equation modeling was used to analysis and Cronbach's alpha coefficient was used to determine the reliability of the questionnaire. The results showed that knowledge management and customer relationship management both related to customer knowledge management directly and indirectly through channel management and interaction management.

Keywords: knowledge management, customer relationship management, customer knowledge management, channel management, interaction management.
Introduction

Customer knowledge has been known as a main source that can be used to support research and development, improvement and innovation, facilitate better understanding of market opportunities and support long-term relation with customers. Capturing this knowledge and analyzing it, the organization will achieve competitive advantage and can offer new products and services, improve customer service, respect customers, make customers satisfied, find customer needs and respond to those needs (Afrazeh, 2005). Customer knowledge management is a process that involves the identification, acquisition and use of knowledge beyond organizational boundaries, the customer knowledge with the aim of creating value for the organization (Paquette, 2004). Customer knowledge management can also be defined as a process which helps integrating customer relationship management and knowledge management (Gebert et al, 2002). In fact CKM tries to creating continuous interaction through various communicative channels to gain information about customers, using their experience and knowledge in presentation of products and services. Therefore by creating multiple integrated communication channels, the most efficient and least costly combination of channels must be selected to communicate with customers (Gebert et al, 2003).

In this research, the relation between knowledge management and customer relationship management with customer knowledge management has been studied by considering the intermediate role of channel management and interaction management in Azaran Valve Co. First the literature related to the research variables will be presented. Then relationship between these variables will be discussed and a conceptual model of research will present. Next, the research methodology and findings are presented and finally results will be discussed.

Literature Review

In recent years, various organization and companies start to join to knowledge process and new concepts such as knowledge work, knowledge worker, knowledge management and knowledge organization inform the intense of this process. Peter Drucker by using these words informs a new kind of organization that uses power of their minds instead of their physical power. According to this theory, in future, societies can expect to develop that have more knowledge (Drucker, 1998). Knowledge is simply the ability, skill and experience of implementation and transfer of data, information and ideas to do things better, make decisions and solve problems (Milton, 2007). Today, successful organizations are able to applying knowledge and to transform it into organizational knowledge. Organizational knowledge is an ability that developed by members of organization in order to creating distinction in process of work in specific field by determining set of general concepts, that its application depends on mass perceptions(Tsoukas and Vladimirou, 2001).
Knowledge Management

Today is the era of knowledge-based organizations. In order to access new resources, knowledge management has attended new theories such as knowledge management community with the goal of achieving immense resources of customer knowledge. Today, creating and maintaining relationships with customers, not just to sell products and services, but also to access their information and knowledge, is a new concept discussed in knowledge management systems (Retna and Tee, 2011).

In recent years, knowledge management acts as the most interesting and challenging issue of business management and its application is extending along with other topics of management field. Knowledge management is the process which help organizations to identify, select, organize, disseminate and transfer knowledge and skills that are part of history of the organization and generally are Unstructured (Manning, 2009). If knowledge has a strategic role that organization can use it in value creating activities and use knowledge as a tool to implementation of existing opportunities in competitive market. Because maintaining a competitive advantage for companies is not possible anymore by doing things better and faster, but it is possible when it can't be imitated by others. To achieve sustainable competitive advantage, considering the available knowledge and make effective use of it is very important as well as creating the structure to use modern knowledge (Davenport, 2001). The most important role that can be attributed to knowledge management is to consider it as a change methodology. Knowledge management in one hand can be an important changing factor in organization through taking new knowledge into system and on the other hand by effective management of this knowledge. Because of the proximity to corporate decisions and actions, knowledge can far more improve performance than data and information and consequently can improve the quality of services in organizations in general and public organizations in particular (Jennex, 2008).

Customer Relationship Management

Customer relationship management is a process to collect information about customers and its aim is to find and record customers' important features to implement marketing activities base on customers demand and quality. Customer relationship management is the process of attracting, keeping, and growing profitable customers and by focusing on the traits and characteristics that demonstrate the added value to customers, trying to loyal customers (Handen, 2000). Handen believes that CRM is an implementation of comprehensive solution that by integrating people, process and technology make a perfect communication among all activities of customers to enhance relationship of organizations and their customers (Handen, 2000). CRM is rooted in communicative marketing and improves long term profitability by changing marketing way base on exchanging and emphasizing on presence of new customer, to keep customers by effective management of customer relationship. Therefor CRM is a complicated method that extracts customers data from all customers contact points to company. Also effective management of information plays an important role in implementation.
of CRM (Peppard, 2000). CRM causes customer satisfaction, saving costs and more products and incoming. Hence the deployment of customer-oriented management is one of the important issues in the necessities of organizations survival in today's competitive world, because customer relationship management makes connection between business processes and customer strategy to increase profitability and customers' loyalty gradually (Chalmeta, 2006).

Customer Knowledge Management

Customer knowledge management (CKM) is a process to help integration of customer relationship management and knowledge management (Gibbert, 2002). In fact, customer knowledge management transfer knowledge management processes from theoretical goals to applied goals. CKM follows to creating an opportunity to use customers of organization as a partner to create value for the organization. CKM is a strategic process that superior companies use it to relief their customers from passive receptor of products and services and make them powerful knowledge partners (Paquette, 2006). So customer knowledge managers unlike customer relationship managers do not try to keep old customers, but they focus on work with new customers in a totally new environment.

Generally, customer knowledge management is a combination of customer relationship management and knowledge management and an appropriate strategy to gain knowledge from customers and present the best and the most useful knowledge to them. CKM can be summarized as follow:

1- Creating proper communication with customer and gaining company's vital knowledge of him

2- Summarizing and documentation of knowledge and distribute it between other staff.

3- To transfer this knowledge to the upper layers of organization for subsequent decisions on products and services tailored to customer needs.

4- Translating this knowledge to customers by presenting products and services according to customer's requirements.

In consideration of relationship between knowledge management and customer relationship management with customer knowledge management, the mediatory role of channel management and interaction management has been studied. Channel management is set of analysis processes, planning, organizing and control of distribution and marketing channels of organization. In particular, channel is a way or duct that products or services move from manufacturer to final customer (Rajiv et al, 2002).

When a company is willing to engage with customers, it tends to use combination of different channels or media such as advertising, direct contact, sales promotion, public communication
and so on. If a company wants to be successful based on its impression on customers and establish a relationship with them through the communication channel, it should be sure of the message stability provided by these tools (Storbaka, 2001). Interaction management is analysis and selection of modern, optimized, integrated and low cost communication channels in order to achieve optimal channel mix. The objective is to increase the quality and value of interactions while at the same time decreasing the cost of interactions by shifting customers to less costly channels (Gebert, 2002).

According to theoretical literature, research hypothesis are as follow:

H1: relationship between knowledge management and customer knowledge management
H2: relationship between customer relationship management and customer knowledge management
H3: mediating role of interaction management in relation of knowledge management and customer knowledge management
H4: mediating role of channel management in relation of knowledge management and customer knowledge management
H5: mediating role of interaction management in relation of customer relationship management and customer knowledge management
H6: mediating role of channel management in relation of customer relationship management and customer knowledge management

According to research theoretical literature and hypothesis, the conceptual model of this research is shown in figure 1.
Figure 1: Research Conceptual Model

Research Methodology

Research Population and Sample

This research is applied based on goal and descriptive survey based on data collection. Statistic population of this research consists of Azaran valve co. staff. Total number of employees are 177 people; the number of sample is estimated 135 people according to Kerjesi and Morgan table. To collect data, a researcher made closed responses questionnaire designed and distributed among the survey respondents which 133 questionnaires have been approved.

Research Variable Measurement

In order to confirm the validity of the questionnaire, approval of experts and university professors and confirmatory factor analysis was used. Cronbach's alpha was used to determine the reliability of the test. Cronbach's alpha for all questions relating to the variables in the analytical model is 0/83 respectively, which is an acceptable level.

Results

Results Of Factor Analysis

The results of testing the research factor averages presented in table 1.
### Table 1: Results of variables mean test

<table>
<thead>
<tr>
<th>factor</th>
<th>average</th>
<th>Std-deviation</th>
<th>t</th>
<th>Sig. (2-tailed)</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM</td>
<td>3/5815</td>
<td>0/473</td>
<td>14/176</td>
<td>0/000</td>
<td>0/5814</td>
</tr>
<tr>
<td>CRM</td>
<td>3/8717</td>
<td>0/4046</td>
<td>24/845</td>
<td>0/000</td>
<td>0/8717</td>
</tr>
<tr>
<td>CKM</td>
<td>3/4552</td>
<td>0/5159</td>
<td>10/176</td>
<td>0/000</td>
<td>0/4552</td>
</tr>
<tr>
<td>Channel management</td>
<td>3/8722</td>
<td>0/6012</td>
<td>16/730</td>
<td>0/000</td>
<td>0/8722</td>
</tr>
<tr>
<td>Interaction management</td>
<td>3/7500</td>
<td>0/6469</td>
<td>13/369</td>
<td>0/000</td>
<td>0/75</td>
</tr>
</tbody>
</table>

Given that the value of Sig relevant to all factors is smaller than 0/05 and according to confidence interval 0/95, it can be concluded that factors mean are above average at an acceptable level.

### Measurement Model Test

To determine to what extent the indexes are acceptable for measurement models, first all measurement models should be analyzed separately. Based on adopting such a method, the 5 measurement models of the relevant variables, are tested separately. The overall fit indices for the measurement model are presented in Table 2.

### Table 2: overall indexes of fit in measurement models

<table>
<thead>
<tr>
<th>index</th>
<th>CMIN/DF</th>
<th>GFI</th>
<th>RMR</th>
<th>CFI</th>
<th>NFI</th>
<th>IFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM</td>
<td>1/9</td>
<td>0/86</td>
<td>0/08</td>
<td>0/96</td>
<td>0/93</td>
<td>0/96</td>
</tr>
<tr>
<td>CRM</td>
<td>1/52</td>
<td>0/927</td>
<td>0/038</td>
<td>0/973</td>
<td>0/926</td>
<td>0/973</td>
</tr>
<tr>
<td>CKM</td>
<td>1/69</td>
<td>0/937</td>
<td>0/07</td>
<td>0/974</td>
<td>0/941</td>
<td>0/975</td>
</tr>
<tr>
<td>Interaction management</td>
<td>1/58</td>
<td>0/989</td>
<td>0/013</td>
<td>0/995</td>
<td>0/986</td>
<td>0/995</td>
</tr>
<tr>
<td>Channel management</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

According to the above results it can be concluded that the measurement model are fit well. In other words, general indexes confirm that data supports the model.
Results Of Path Analysis

After review and approval of the measurement model in the first step, the second step of the analysis is to test the hypotheses using path analysis. Overall indices of path analysis fitness are presented in table 3.

Table 3: model fitness indexes

<table>
<thead>
<tr>
<th>index</th>
<th>value</th>
<th>Acceptance area</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMIN/DF</td>
<td>2/63</td>
<td>1&gt; 3&lt;</td>
</tr>
<tr>
<td>IFI</td>
<td>0/952</td>
<td>&gt;0/9</td>
</tr>
<tr>
<td>GFI</td>
<td>0/898</td>
<td>&gt;0/9</td>
</tr>
<tr>
<td>NFI</td>
<td>0/925</td>
<td>&gt;0/9</td>
</tr>
<tr>
<td>CFI</td>
<td>0/952</td>
<td>&gt;0/9</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0/074</td>
<td>&lt;0/1</td>
</tr>
</tbody>
</table>

According to data from the above table it can be concluded that the overall index showed a good fit of the model is given by data. In other words we can say that the data collected are supported in the model well. Structural equation model is presented in Figure 2.

Figure 2: Structural equation model
Test The Hypothesis

Research hypotheses with regression coefficients and partial index values for each hypothesis are presented in Table 4.

Table 4: hypotheses testing results

<table>
<thead>
<tr>
<th>No</th>
<th>hypothesis</th>
<th>Regress</th>
<th>Critical</th>
<th>P</th>
<th>result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KM → Interaction</td>
<td>0/15</td>
<td>2/40</td>
<td>0/01</td>
<td>accept</td>
</tr>
<tr>
<td>2</td>
<td>KM → Channel</td>
<td>0/27</td>
<td>4/14</td>
<td>0/00</td>
<td>accept</td>
</tr>
<tr>
<td>3</td>
<td>CRM → Interaction</td>
<td>0/17</td>
<td>2/72</td>
<td>0/00</td>
<td>accept</td>
</tr>
<tr>
<td>4</td>
<td>CRM → Channel</td>
<td>0/23</td>
<td>3/72</td>
<td>0/00</td>
<td>accept</td>
</tr>
<tr>
<td>5</td>
<td>Interaction → CKM</td>
<td>0/36</td>
<td>4/85</td>
<td>0/00</td>
<td>accept</td>
</tr>
<tr>
<td>6</td>
<td>Channel → CKM</td>
<td>0/33</td>
<td>4/39</td>
<td>0/00</td>
<td>accept</td>
</tr>
<tr>
<td>7</td>
<td>KM → CKM</td>
<td>0/33</td>
<td>6/34</td>
<td>0/00</td>
<td>accept</td>
</tr>
<tr>
<td>8</td>
<td>CRM → CKM</td>
<td>0/2</td>
<td>4/48</td>
<td>0/00</td>
<td>accept</td>
</tr>
</tbody>
</table>

As can be seen in Table 4, according to the P value of the regression coefficients and hypothesis, it can be said that research hypotheses are accepted with certainty of 0/95.

Discussion and Conclusion

According to the results of the data analysis, the first hypothesis with regression coefficients 0/33 and second hypothesis with regression coefficients 0/2, both hypotheses with confidence 0/95 are accepted. So we can conclude that knowledge management and customer relationship management have direct relation with customer knowledge management that the results are consistent with results of other research that has been done in this area, including Bueren et al (2004), Rollins et al (2005) and Salojärvi et al (2010). According to results of this research, customer knowledge management is the result of real-time deployment of knowledge management and customer relationship management and as the results showed in Azaran valve co, there is a direct relationship between knowledge management and customer relationship management with customer knowledge management. The results of the tests of hypotheses showed that confirmation of the relationship between knowledge management and interaction management with regression coefficients 0/15 and also confirmation of the relationship between customer knowledge management and interaction management with regression coefficients 0/36, With the 0/95 confident it can be said that interaction management has a mediating role in the relationship between knowledge management and customer knowledge management, and therefore the hypothesis with the 0/95 confident will be accepted. Other hypothesis for this study will be approved like the same and will accept with the 0/95 confident. In relation to mediatory role of interaction management and channel...
management in relationship between knowledge management and customer relationship management with customer knowledge management, the model provided by Gebert et al(2002) can only be noted which has discussed about this issue in brief.

According to relationship between factors of knowledge management and customer relationship management with customer knowledge management, Azaran Co can make sense of the information exchange with customers exploiting appropriate facilities and the latest technology and using group interviews and surveys periodically in order to overcome shortcomings in their products and services and enhance customer loyalty rates may apply. Azaran managers can also take advantage of customer knowledge through creating infrastructures and providing proper facilities for sharing knowledge between employees and organizational units. While strengthen communication channels with customers and build continuous relationships with them can lead to successful customer knowledge management programs and take advantage of its benefits. In this context, improving the customer relationship management system and make appropriate communication between organization units, in order to flow information of customers, changes in the market and know the best ways of providing services can help Azaran make optimal use of customer knowledge.

In this study in order to analysis the relationship between knowledge management and customer relationship management with customer knowledge management and make connection between customers and company, the presented model consist of two factors, interaction management and channel management. Indeed, interaction management and channel management are as mediating tools for knowledge exchange and interaction between companies and customers which proper use of these tools lead to achieving of customer knowledge management goals. As statistical analysis shows the intermediary role of channel management and interaction management, in relationship between knowledge management and customer knowledge management and also between customer relationship management and customer knowledge management has been approved. That is by enhance capabilities of these mediatery tools, Level to achieve customer knowledge management goals will increased and company will be more successful in marketing activities and designing and manufacturing products in accordance with the needs and demands of customers.

To do this research, the researcher was confronted with the limitations that some of them have been fulfilled and some are outside the control of the researcher. Some of these limitations are as follow.

1- Limited timeframe

2- limit the society to be investigated samples

3- limitation of the results generalization because the sample is limited to Azaran valve co

4- The lack of a standard questionnaire about the study and use of researcher made questionnaire
5- Lack of done field research and do not understanding of the importance research on customer knowledge management

6- Lack of respondents understanding of concepts of research such as knowledge management and customer knowledge management

So, it is recommended for future researchers to keep in mind these limitations and pay attention to other aspects of customer knowledge management and identify other effective factors of customer knowledge management in organization. Moreover, implementation of this research in other industries such as banking and insurance industry is also would be an important area for future research. While researchers can do this research on the different time periods and in different societies and compare its results together.

References


