

## The Role of Customer Knowledge Management (CKM) in Improving Organization-Customer Relationship

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**Abstract:** The customer's value has become apparent for the leading companies in today's competitive environment. Therefore they are constantly trying to improve their relationship with customers via their customer relationship management systems. Knowledge management (KM) can also help to improve the quality of the information obtained by customer relationship management (CRM). However, in order to be more effective, KM should be provided with a steady and ongoing process of gathering information from outer sources in cooperation with the CRM system. In this study, a customer knowledge management (CKM) model has been proposed for the integration of CRM and KM in four stages. In addition, a survey has been conducted to identify the barriers of the design and implementation of CKM. Research sample included Managers of 22 manufacturers in Isfahan and the questionnaire consists of 29 multiple-choice questions. Findings imply that inadequate supporting budgets, lack of senior management commitment to CKM and poor communication are the barriers to the design and implementation of CKM.

**Key words:** Knowledge Management • Customer Relationship Management • Customer Knowledge Management

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### INTRODUCTION

Competition in today's market has been transferred from the hardware domain to that of software and recently to that of information and policies. Meaning, that only those organizations will progress and thrive that think up methods and processes to meet their needs comparatively better than their rivals. In this regard, Knowledge Management (KM) and Customer Relationship Management (CRM) have been the focus of attention in organizations and academic contexts, since both strive to obtain the constant benefits of competition through the optimization of the organizational resources in order to support commerce [1] leading to competitive advantage. CRM in competitive markets has inspired the organizations to look into ways to be in touch with a widespread scope of customers and also approaches to gain this knowledge. Easily said, that it would be impossible to keep in touch with a wide scope of customers without employing KM [2]. To enhance the efficacy, effectiveness and the

trustworthiness of desirable goods and services to customers and to meet their satisfaction, the organization ought to manage its knowledge about customers. Therefore, it seems that KM can be beneficial to better implementation of CRM. For this reason, the present article attempts to investigate upon the impact of KM on successful CRM. Also, the article will present the integrated model of both systems. Prior to the analysis of the presented consistent model, elaborated definitions will clarify the point better. Furthermore, an empirical analytical research is conducted to support the integration of these two systems in the real world. This research identifies the integration barriers of CRM and KM in organizations in order to make clear the possibility of achieving Customer Knowledge Management (CKM).

**Literature Review:** In order to support KM, in this section CRM and its conceptual framework, KM and its application in businesses and the uniformity of KM and CRM are demonstrated.

**Customer Relationship Management:** Customer relationship management (CRM) is a process to identify, select, acquire, develop and retain profitable customers [3]. Through having long-term relationships with each of the customers, CRM both considers their requests and needs and tries to provide their satisfaction. CRM is not quite a new notion, but it has employed the most developed technology, namely IT, in order to serve the customers in a practical fashion [4]. CRM is recognized as one-to-one marketing in business [5], which in turn means organizations should utilize CRM to replace the wholesale perspective while maintaining customers through appropriate relationships with each of them [6]. Therefore, CRM is a modern tool to analyze customers' information which acquires its data from various sources such as internet, stores, interaction centers, exhibits, etc. [7]. Provided that the CRM system is well devised and implemented, thorough identification of the customers will definitely happen. More often, CRM strategy is based on four main objectives [8]:

- To hearten the other companies' customers as well as the potential customers to embark on the first purchase;
- To encourage the first-time customers for further purchase;
- To keep the temporary customers as permanent customers; and
- To provide decent services for faithful customers.

CRM enables the managers to employ customers' data to increase their production, provide better services and boost their long-term profit.

**Knowledge Management:** Nowadays, providing and utilizing knowledge in organizations has become a procedure which can lead to competitive advantage. Availability of knowledge in organizations is such a valuable fund that empowers them in various complicated situations [9]. Knowledge management includes supporting innovations, brainstormed ideas and utilization of organizational thought power. It also embodies acquiring appropriate insight and experience to make the data accessible and useful for the time and place where they come in handy and also for those who need it [10]. Knowledge management is an approach which creates data to meet the managers', customers' and operators' satisfaction. In other words, knowledge management is an inclusive process that considers identification, transmission and usage of accurate data

and experience in organizations. The main principles of knowledge management include implementation and maintenance of the organizational and technical infrastructures as the indispensable groundwork to spread knowledge and to opt for specific technologies. Through this process, all available sources of information such as personnel, information centers, documents and files are gathered and classified in appropriate categories. This data will be accessible in many ways throughout the organization for the knowledge workers. The appropriate data will be provided in order to make proactive decisions at the right time [9]. Knowledge can be divided into two groups of implicit and explicit. Explicit knowledge is subjective, reasoned and logical. In other words, explicit knowledge is a collection of policies, approaches, applications, documents, instructions, reports and objectives in each organization. Explicit knowledge can be stated as words and numbers, or given in forms of data, scientific formulae, detailed descriptions and instruction manuals. This knowledge can be simply distributed among people both officially and systematically [11]. The other type of knowledge is implicit; it is totally personal and can hardly be distributed in specific forms among people. Mental insight, intuition and hunches account for this type of knowledge. Implicit knowledge has deep roots in experimental activities, objectives, values and feelings [11]. Organizations must enjoy both explicit and implicit knowledge in management in order to manipulate their data. For this reason they need to provide appropriate cycles of available knowledge.

Information cycle or so-called knowledge management includes four levels: first, accessible knowledge inside the organization must be identified, collected and stored in a proper medium. Next, information should be shared with others to add to the data and regenerate information. In this way, the acquired knowledge can be utilized to achieve the aspired objectives [9]. The presented introduction about knowledge management can generally be applied to many organizations. However, what is highlighted in this article is the knowledge management process in commercial circumstances which is further elaborated below.

**Knowledge Management in Business:** Most of the models presented in knowledge management have shortcomings in business contexts [1]. This section is dedicated to an exhaustive explanation of a model of knowledge management that is deemed appropriate for business and can be applied to CRM as well. The general form of the model is depicted in Figure 1.

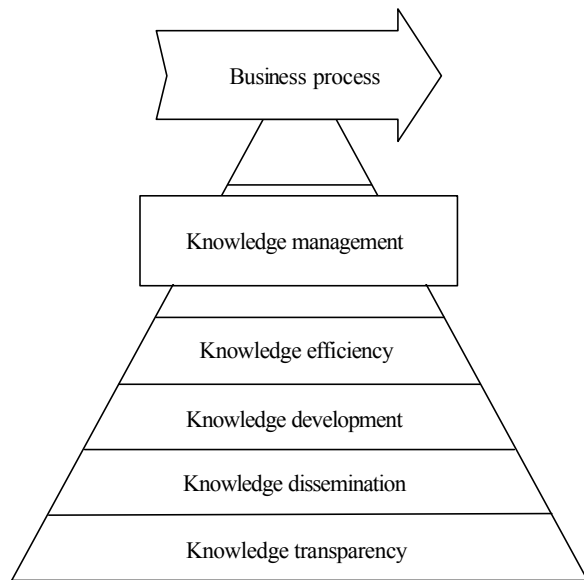


Fig. 1: The pyramid of knowledge management in commercial process [12]

Prior to any elaboration on knowledge management in business contexts, it should be stated that business activities are divided into three levels of knowledge about customers, knowledge for customers and knowledge from customers. Knowledge about customers is to figure out the motivations and requirements of the customers. This knowledge is needed to aim customers in competitive contexts. The nature of this type of knowledge is one-to-one interaction with customers. Knowledge for customers is to provide customers with the information they need. Organizations must transmit the information about their products, services and technology to the customers. The direction of the movement in this case is from organizations towards customers.

Knowledge from customers includes what customers know about products, distributors, competitors and markets. This type of knowledge which moves from customers towards organizations can help improve the products, services and marketing programs. The levels of knowledge presented here can play important roles in commercial contexts to achieve the aims of knowledge management.

The main goal of KM in business activities is to lead the organization to opportunities through the maintenance and management of knowledge. To do this, the organization must first of all, identify its needs regarding customers, so-called “customers’ knowledge”. This information helps the organization to better recognize its customers. Such a procedure is called

knowledge transparency and results in customers’ knowledge. Dissemination of the knowledge implemented among traders in the former stage, paves the way for its usage. The next step which is called knowledge development is dedicated to the adaptation of available knowledge with business procedures. Gathering appropriate knowledge at this stage is based on the customers’ traits, abilities and also organizational merits in order to keep up with the customers’ needs. This knowledge is provided for the customers. However, customers should take a significant part in knowledge management in order to boost the efficiency of the gathered data. Indeed, it is the transmission of data from the market to organizations that gives value to the domestic knowledge of organizations. Therefore, customers play key roles in creating the final stage of knowledge management which is called knowledge efficiency. It is, in fact, knowledge from customers that generates efficiency. Knowledge efficiency follows understanding the present and future needs of the customers in order to augment the effectiveness of the business procedures [1]. Provided that these stages are practiced well, they will lead to such benefits that the organization will be comparatively well-performed among other competitors.

**Integrating CRM and Knowledge Management:** To build up a steady and profitable relationship with customers, organizations must identify their customer’s respective needs and preferences and try to satisfy them. Such work is under question unless utilizing “customers’ knowledge” [9]. Constant relationship with customers’ requires continual input of their information into the organization through CRM. Later, this is the organization which makes the information meaningful through knowledge management. Therefore, the organization needs complete integration between KM and CRM to become successful in competitive markets. The unity of CRM and KM results in gaining profit. On one hand, KM focuses on the most valuable knowledge (i.e. customers’ knowledge) and on the other hand, CRM utilizes a conceptual framework to increase the quality of relationship with purposeful expenses. Consequently, an integrated model of CRM and KM presented and will be described both conceptually and practically.

**Conceptual Framework of CKM:** The final goal of CKM is to have a steady and long-term relationship with customers in order to turn them into trade partners. If the process takes place appropriately, organizations could

definitely gain profits from their customers. What can increase the possibility of CKMs success is receiving effective information from customers and turning it into effective knowledge. CKM could then be divided into two parts; the first is a system that can build up a relationship between the organization and customers through different channels to exchange information from both sides; the second is a system that can make available information meaningful for further usage. CRM and KM are in charge of the first and the second task, respectively. Such a link is further explained. Figure two depicts the conceptual framework for CKM. CRM creates different channels between the organization and potential customers (see the next section) and provides personal data such as biographical information. Data gathered by CRM from out of the organization should be clarified by KM through separation, classification and encoding. In other words, data obtained through CRM from the customers is elucidated in this stage through CKM via KM. In case clarification ends up in good knowledge, it could be claimed that the organization has achieved good knowledge about the customers, which in turn, changes potential customers into recognized ones within the organization.

In the second stage, some of the recognized customers can be valuable for the organization based on both the organization needs and the customers' qualities. These customers will be kept in touch since their qualities match those of the ideal customers. The selection cannot be based on a scientific and logical procedure since the gathered data about customers is limited to the information received from outside of the organization which is based on the market share and transactions. Therefore, anticipations are not always correct. The organization can be sure of the value and profit of the customers only if they have had commercial connections for quite some time. Moreover, KM produces decent data about the abilities and capabilities of the organization for the customers in order to motivate them for further cooperation. The previous identification of the customers creates useful and tangible data for them. This information is transmitted through CRM and should be prepared in a way that attracts customers in competitive markets. If this stage is carried out appropriately, customers will be appealed. Therefore, if the data gathered in the organization is more valuable than that of the competitors, they should be able to attract customers, which in turn, means customers will start business with the organization.

The third stage is a profit analysis done in KM and CRM processes, on attracted customers. This analysis is done according to the established knowledge of the

transactions and benefits with each customer. Cooperation with each customer will be expanded only if the results obtained from the profit analysis are positive. Besides profit analysis, value analysis is sometimes done when the results are not positive [13]. Some customers do not have any direct effects on the organization's profits. In another words, there are some customers who do not offer much direct profit to the organization due to the kind of relationship and storage expenses.

However, they reduce the marketing expenses for the organization because of their position in the market. They disperse the products in great scales and advertise the capabilities of the organization when they support the trade mark. Their relationship is, therefore, helpful even if they do not create direct profits. That is the reason that value analysis must be carried out after the third stage. Relationship with customers will be kept, in order to make them beneficial for the organization. Good customers are those whose relations with the organization are long-lasting and stable. They feel a sense of commitment to the trade mark of the organization they are dealing with. These customers can help the organization expand markets, products and services.

The fourth stage, presents information about the changes and modifications of the market, the competitors' plans and strategies, people's tastes and possible improvements which are received from valuable customers as the organization becomes active in the market. This information is looked over and analyzed inside the organization to be formed into useful knowledge for the commercial processes of the company. All the stages of being a potential customer to becoming a trade partner are displayed in the conceptual framework of the CKM in Figure 2.

**Barriers of Integrating CRM and KM:** After presenting the CKM model it is time to take a look at the design and implementation barriers of such systems in an organization. For this purpose, in the following a case study is performed in order to identify such obstacles to further help the understanding and implementation of CKM.

**Research Methodology:** A survey research is conducted to identify the barriers of the design and implementation of CKM. The research is typically practical and a descriptive analytical method is used. 22 manufacturers in Isfahan were surveyed as the sample of the current study. The manufacturers are selected by the Isfahan Department of Industry and Economic Affairs and a questionnaire is used for data collection.

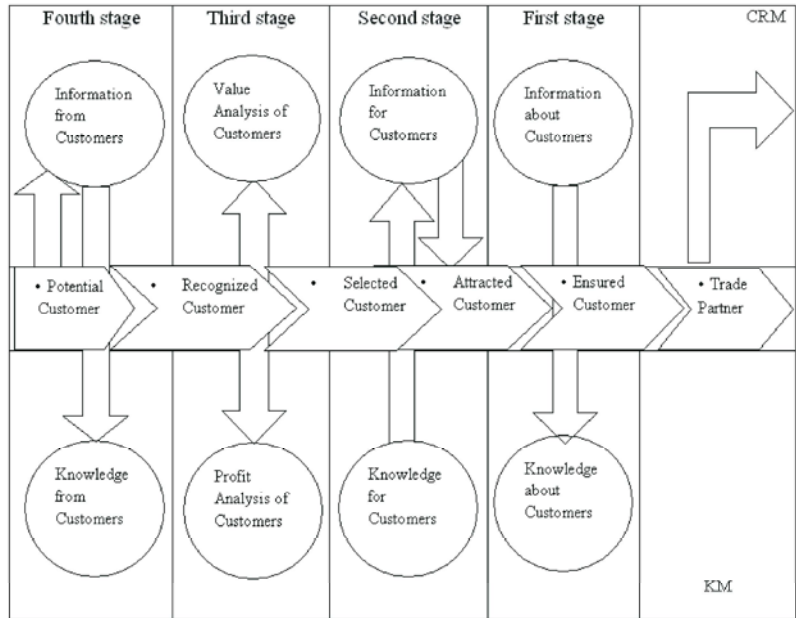


Fig. 2: The proposed conceptual framework for CKM

The questionnaire consists of 29 multiple-choice questions, each having five answer choices according to the Likert scale. The questionnaire is used to measure perception of the sales and marketing managers of the 22 selected manufacturers about the barriers of CKM. The 29 items questionnaire's reliability is approved by computing Cronbach's alpha of 0.934. The questionnaire also includes a number of questions regarding the customer satisfaction/complaint recording system used in the company, the customer data collection method employed and the technology used to analyze customer data. The questionnaires are distributed to the participants of the study either through a direct encounter or through an e-mail. Out of the distributed questionnaires, 53 are returned to the researcher with a response rate of 76%. In the following, the results are presented, analyzed and discussed.

**Data Analysis and Discussion:** The majority of the respondents are between 35 and 44 years old and 24.8 percent of them are females. Table 1 depicts the frequencies concerning the use of customer-oriented KM instruments in polymeric pipe and fitting manufactures in Isfahan province. Overall, the findings show that less than half of the organizations always or frequently use instruments to evaluate the external environment and to assess and obtain knowledge from customers. However, only about one quarter of them

systematically carry out market research. It is also worth mentioning that 44 percent of the respondents carry out customer satisfaction investigations.

Table 2 depicts the percentage of the organizations that use any type of a customer satisfaction and complaint recording system; 43 percent of them use questionnaires, e-mails, call centers and periodic market research and customer surveys in order to collect customer satisfaction data; and 64 percent of them collect customer complaints data. It is concluded, therefore, that about half the organizations do not usually employ any customer KM methods and have not adopted any CRM philosophy.

Table 3 depicts the type of system used to collect the data and Table 4 addresses the technology employed to analyze these data and transform them into meaningful information.

When analyzing Table 5, it is seen that the most important barriers of CKM in polymeric pipe and fitting manufactures in Isfahan province are inadequate supporting budgets, lack of senior management commitment to CKM and poor communication. Furthermore, there are other important barriers including an absence of complementary customer management skills, inefficiencies of business processes, lack of end-user input at the service/design stage, lack of standardization and inter-departmental conflicts, apart from the lack of cultural readiness.

Table 1: Customer oriented instruments

	Never/ Sometimes (%)	Frequently/Always (%)
Assess customers	52	48
Carry out customer satisfaction investigation	56	44
Carry out market research	75	25
Obtain knowledge from customers	59	41
Evaluation of external environment and markets	54	46

Table 2: Customer satisfaction/ complaining recording system

	Yes	No
Customer satisfaction recording system	43%	57%
Customer complaining recording system	64%	36%

Table 3: Customer data collection method

	Internet	Non-Web-based market research
Customer satisfaction data collecting system	20%	80%
Customer complaining data collecting system	32%	68%

Table 4: Technology used to analyze customer data

	Excel-Access	Statistical package	Outsourced to third party
Customer satisfaction	78%	18%	4%
Customer complaining	82%	16%	2%

Table 5: Barriers to CKM

Barriers to CKM	Mean	S.D.	Strongly				
			Agree (%)	Indifferent (%)	Disagree (%)	Strongly Disagree (%)	
Inadequate supporting budgets	4.03	0.95	39.0	34	16.2	8.8	2.0
Lack of senior management commitment to CKM	3.85	1.17	31.8	36.4	13.6	5.7	6.6
Poor communication	3.81	0.94	22.7	37.5	22.7	6.8	1.1
An absence of complementary customer management skills	3.68	1.12	23.9	33.0	20.5	9.1	4.5
Inefficiencies in business process	3.56	1.07	17.0	39.8	15.9	17.0	2.3
Lack of end-user input at service stage	3.53	1.06	20.5	28.4	26.1	17.0	1.1
A lack of standardization	3.41	0.92	12.5	25.0	36.4	13.6	0.0
Inter-departmental conflicts	3.37	1.15	10.2	40.9	21.6	10.2	9.1
Lack of cultural readiness	2.41	1.08	1.1	14.8	27.3	23.9	22.7

## CONCLUSIONS

The proposed model in this article for appreciation of CKM helps the experts use the knowledge for, from and about customers to attain their organizational goals. This is done in four stages; first, information about customers is turned into knowledge about customers; in the second stage, the information for customers is turned into knowledge for customers; the third stage consists of a profit analysis on attracted customers; and finally, information received from valuable customers is presented. In addition, findings of the case study show that inadequate supporting budgets, lack of senior management commitment to CKM and poor communication were the barriers to the design and implementation of CKM.

Literature review shows that while CRM has been traditionally a means of communication with customers

through different channels, there seems a lack of research on the most important source of information, i.e. knowledge from customers. The integrated approach of KM and CRM as a strategic process could assist the organizations and companies to have more customers and better products and services. If the customers reach this stage and have such relations with the company, they will be undoubtedly valuable for the organization. In other words, they will become the trade partners of the company.

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