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A STUDY OF THE ROLE OF INFORMATION TECHNOLOGY FOR IMPROVEMENT, A TOOL FOR CUSTOMER RELATIONSHIP MANAGEMENT IN IRAN KHODROU AGENCIES

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ABSTRACT
In the past, the interaction of organizations with customers in the form of the "customer relationship management" has been studied. But these days the information technology has immense impacts on the various parts of an organization especially on the way of interactions between organizations and customers, so that the information technology tools are now widely utilized. This matter has created a new concept called the electronic customer relationship management within the organizations. The quick development of this technology has made the new methods of cooperation between organizations and customers possible and nowadays in the business world the managers can recognize that the customers are the core of marketing and that the success of any organization depends on the influential communications with them. In order to remain in the competition, the organizations need to apply the information technology tools. It is tried in this paper to study the role of information technology in improvement, a tool for customer relationship management in Iran Khodrou agencies. The research method, regarding the objective, is applied and regarding the data type, this research is qualitative and descriptive and of correlation type. The required data were analyzed using questionnaires and AMOS software. The statistical population involves the managers and staff of Iran Khodrou, for data analysis the Kolmogorov-Smirnov Test, structural equations and regression coefficients were used, the results showed that the information technology has a positive and significant effect on the customer relationship management; based on the results of the research it is recommended that the managers and staff in different institutions and corporations consider the information technology issues for making more improvements in the customer relationship management.

Keywords: *Information Technology, Electronic Mail, Website, Auto Responders, Online Catalogues, Customer Relationship Management, Iran Khodrou Agency*

INTRODUCTION
Introduction and Problem Statement
The Development of communicative tools has caused many changes in the definitions and the human abilities which have been accompanied by the development in other categories as dynamic occupation, variable and flexible working hours and electronic working. However, in the developed world of today, the development of information technology and communications and the inclusiveness of facilities as broadband and cheap internet, cell phones, teleconferencing, personal powerful computers and wireless networks, are being more and more progressed. The information technology has made the house a proper place for doing some activities which were possible to do in the past only at work place, and has enabled people to do some parts of their activities from long distances and through using various tools. Therefore, currently in most parts of the world teleworking has become possible by applying the developments in the field of information and communication technology (ICT) and the role of communicative infrastructures in its implementation is quite clear (Tan, 2008).
According to what was mentioned above, it is tried to study the information technology tools in this paper, regarding the capabilities created by technology in the automobile industry and the relevant companies and also the modern tools that can cause some positive effects in facilitating and expediting the works and the economic savings which may result in the improvement of customer relationship

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management in our country (Bahrami, 2012). The quick development of technology makes the new methods of cooperation possible in the organizations, and nowadays in the business world the managers can recognize that the customers as the core of marketing and that the success of any organization depends largely on advancing an effective relationship with them. In the meantime, a developing country like Iran is not an exception in the course of changes of information technology and it is increasingly in need of development and engendering new markets in and out of country, and identifying and recognizing the dimensions of interaction of organizations with customers and their various needs are of great importance (Jarahi, 2009).

Creation and maintenance of communications with customers neither is a new concept nor relies necessarily on the information technology. Nevertheless, for the improvement of customer lifetime value, using the customer relationship management system is highly important; in the recent years, the term "customer relationship management" has absorbed much attention in the area of marketing, information technology and etc. Many people, including academians, software vendors, counselors and business owners, are engaged in this field and have developed a concept which means the organizational effort for creating and engendering a higher value to the customers. The organizations have recognized the point that the customers are their most precious assets, so they look at the relationships with their customers as beneficial interactions which require accurate management (Martinez, 2011).

Literature Review

Lari *et al.,* (2009) evaluated "a study of effects of electronic customer relationship management on the customer satisfaction" and the study shows that we are facing a world with significant changes in information technology, the business institutions are encountered with a variety of opportunities for implementation of IT-based operations, therefore the researchers try to prove the value of investments in the information technology for improvements in customer relationships. The senior managers in all industries accept that the customers are necessary and vital for survival of their organizations, the customers are the most important assets of the corporations and for the aim of success any organization must be customer oriented. With strengthening the institutions, the information technology tools can affect the perceived quality and value of goods and services and it will lead to the increased customer satisfaction, and the research results show that the researchers would point out the important role of information technology in customization and improvement in customer services in order to create the intangible values for institutions; the information technology tools have made the efficient allocation of resources, short responding time, quality improvement and cost reduction possible.

Hourali *et al.,* (2004) have evaluated "a study of the impacts of the customer relationship management relies on web-based tools and intelligent factors" in the city of Semnan. The results show that the effect of information technology, electronic posts and websites on the customer relationship management is significant. The results of a study by Dehmarde *et al.,* (2002) called "identifying and ranking the effective factors on the information technology in the process of implementation of customer relationship system" suggest that today the organizations enjoy the modern tools based on information and communication technology and websites, their customer relationship management and success in achieving the macro goals of organization depend on the customer satisfaction, and most importantly, websites are the best sources of communication with customers. Managing that process, just like other economic, social and cultural phenomena under the influence of this technology, has witnessed considerable changes.

Rostami (2011) dealt with "an evaluation of the role of information technology in the improvement of customer relationship system" in the city of Tehran. He distributed questionnaires among 180 customers of Negin Khodrou Industry. His results show that in the highly competitive world of today's commerce, the information technology can be posed as the final solution both for the customers and for the organization and also, the electronic mails, online catalogues and websites are significantly influential on the customer relationship management. Anderson (2007) studied "an evaluation and determination of modern technologies in the customer relationship management in automobile industry" in Singapore. That study is a descriptive survey whose results show that providing electronic services and the personnel's approach and websites quality and auto responders are influential on the customer relationship

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management, and the most important dimension, that is using websites, has the most effect on the customer relationship management.

Objectives

The main objective of the paper is to evaluate the role of information technology in improvement, a tool for the customer relationship management.

The special objectives are:

1. Identifying the influential structures of information technology, a tool for the customer relationship management

2. Measuring the influential structures of information technology for improvement, a tool for the customer relationship management

3. Ranking the influential structures of information technology, a tool for the customer relationship management

4. Designing an optimal model of the influential structures of information technology for improvement, a tool for the customer relationship management

1. Research hypotheses: considering the conceptual framework of the research, the hypotheses are as follow:

- The main hypothesis: information technology has a positive and significant effect on the customer relationship management.

- The first sub-hypothesis: electronic mail has a positive and significant effect on the customer relationship management.

- The second sub-hypothesis: websites have a positive and significant effect on the customer relationship management.

- The third sub-hypothesis: online catalogues have a positive and significant effect on the customer relationship management.

- The fourth sub-hypothesis: portals have a positive and significant effect on the customer relationship management.

- The fifth sub-hypothesis: auto responders have a positive and significant effect on the customer relationship management.

The Research Methodology and Data Collection Tools

Regarding the objective, this research is an applied one and regarding the data collection method, it is a descriptive survey. Using documents, articles and dissertations, the theoretical formulation was library based and in the review stage, the field method using questionnaires was dominant. The data collection method in the research was based on using closed ended questionnaires valuing 0-100 which were distributed and after being filled out were gathered. The questions were categorized in six parts related to the research hypotheses, the relationship between the questions and each one of the research variables is shown in the following table.

Table 1-1: The relationship between the questions and each research variable

hypothesis	variables	Questions in questionnaire
1	E-mail	1-5
2	Website	6-10
3	Online catalogues	11-15
4	Portals	16-20
5	Auto responders	21-25
--	Customer relationship system	26-30

For measuring and increasing the research validity in this paper, at first, 30 questionnaires were distributed among professors, experts, staff and mangers of the agency, the statistical experts and MBA students- marketing- and after being gathered and confirmed in terms of validity, 162 questionnaires were distributed among the staff of Iran Khodrou. In order to evaluate the reliability of questionnaires, the

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achieved data were first calculated by Cronbach's alpha, the coefficients of Cronbach's alpha are as the following formula and table suggest:

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum S_i^2}{S_x^2}\right]$$

Table 2-1: The Cronbach's alpha coefficients

Row	Hypotheses	Cronbach's alpha
1	E-mail	0.705
2	Website	0.826
3	Online catalogues	0.791
4	Portals	0.736
5	Auto responders	0.776
_	Customer relationship system	0.691
_	Total	0.761

The Statistical Population and the Sampling Method and Sample Size
The statistical population involves a complete collection of the possible measures or the recorded information of a qualitative attribute about the full accumulation of units about which we want to have some interpretations. Simply saying, a statistical population involves all the scale or hypothetical members of a class of individuals, events or objects the researchers may devote their findings to (Saroukhani, 1994).
In this study, all the staff of Iran Khodrou in all its agencies throughout Kermanshah in 2014 is included in the statistical population.
Regarding the collected data from all Iran Khodrou centers throughout the city of Kermanshah, the statistical population equals 285 people. Using Morgan table, the sample size equals 162 people. The collection method is the random sampling.

Table 3-1: The statistical population and the sample size

| Row	Statistical population	Sample size	Total number of agencies	Number of studied agencies
1	285	162	8	8

Data Analysis
In this study, using descriptive data related to the demographic characteristics involving: the gender of respondents, education, years of service and position were studied and base on the information achieved through the distributed questionnaires it was found that 0.61 percent of the people studied were women and 99.38 percent were men. The academic status showed that 17.90 percent had either high school diploma or lower degrees, 78.39 had undergraduate degrees, and 3.70 percent had graduate or higher degrees. In terms of years of service 32.71 percent had less than 5 years of service, 16.66 percent had 5-7 years, 43.20 percent had 7-10 years, 7.40 percent had more than 10 years of serving. The position status implied that 87.03 percent were staff, 12.96 percent were managers; for the inferential statistics, Kolmogorov-Smirnov test, regression coefficients, standard coefficients and structural equations were used.
In using path analysis and regression methods, the research variables must enjoy normal distribution. For studying that matter, Kolmogorov-Smirnov test was utilized. The sample size equals 162 and the value of the statistic value of Kolmogorov–Smirnov test equals 0.329. P-value equals 0.081, since it is greater than the significance level, so the normality hypothesis is acceptable.
Because the Cronbach's alpha equals 0.76 and since it is greater than 0.70, so we can say that the questionnaire is reliable. This model will study the effects of independent variables of e-mails, websites,

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portals, auto responders and online catalogues on the dependent variable of customer relationship system. Therefore the intended model is as follows:
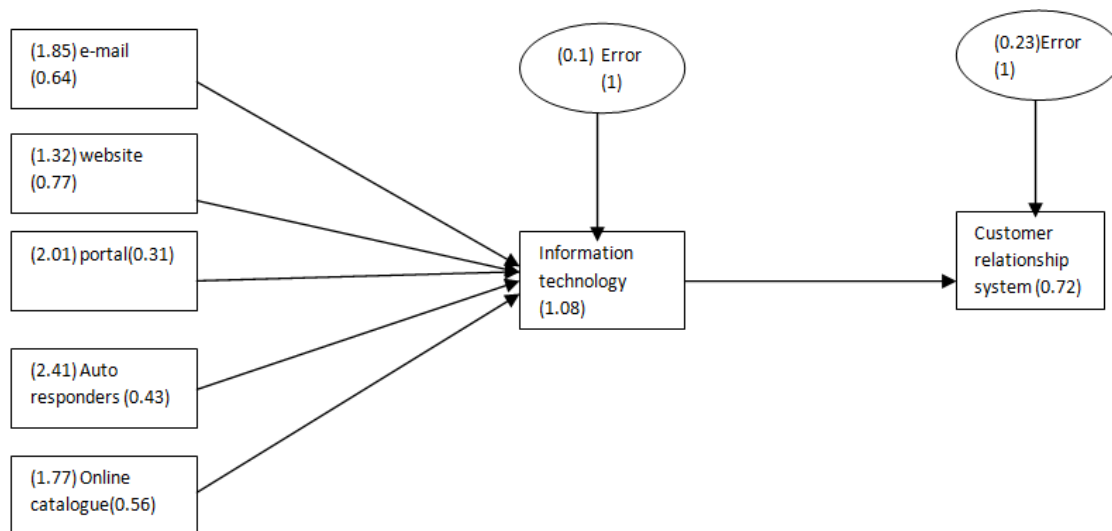
Diagram 1-1: The regression coefficients of variables in Iran Khodrou agencies

In the above figure, 0.72 shows the regression coefficient between the information technology and the customer relationship system and 1.08 shows the varriable of variance of the information technology. The other variables are defined like it as well.

The following table shows the evaluated regression coefficients of the independent variables on the dependent variable. Regarding that table, it is cleear that the regression coefficients of the e-mail variable equals 0.46, the estimated regression coefficient of the website variable equals 0.77, the estimated regression coefficient of the portal variable equals 0.31, the estimated coefficient of the auto responders is 0.43 and the estimated regression coefficient of the variable of online catalougues equals 0.56. Considering the last column of this table which shows p-values of the significance hypothesis of the coefficients of independent variables are 0.017 for e-mails, 0.037 for websites, 0.041for portals, 0.031for auto respondents, 0.027for online catalogues, and since all of these values are less than 0.05, thus all of these coefficients are probably significant. In the second column the standard error is shown and the third column shows the critical ratio.

Table 4-1: The regression coefficients of independent variables in Iran Khodrou agencies

| p	C.R.	S.E.	Estimate	Independent variable	Dirrect effect	Dependent variable
0.017	0.716	1.360	0.64	e-mail	→	Information technology
0.037	0.625	1.148	0.77	website	→	Information technology
0.041	0.369	1.417	0.31	portal	→	Information technology
0.031	0.541	1.552	0.43	Auto responder	→	Information technology
0.027	0.309	1.330	0.56	Online catalogue	→	Information technology
0.045	0.649	1.039	0.72	Information technology	→	Customer relationship management

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Structral Equations

The independent variables are shown in this way: e-mail with x_1, website with x_2, portal with x_3, auto responders with x_4 and online catalogues with x_5, and the dependent variable of customer relationship system is shown with Y. Regarding the regression coefficients, the linear regression model fitted to the data is as follows:

$$Y = 0.14 + 0.64 x_1 + 0.77 x_2 + 0.31 x_3 + 0.43 x_4 + 0.56 x_5$$

The Standardized Coefficients of Variables

Using this regression model, you can predict any value of the variable of customer relationship system by the independent variables. Now, in order to determine which independent variables have the greatest effect on the dependent variable, the standardized coefficients of independent variables are calculated, the value with the greater standardized coefficient will have more effect on the dependent variable. The standardized coefficients of independent variables are shown in the following diagram.
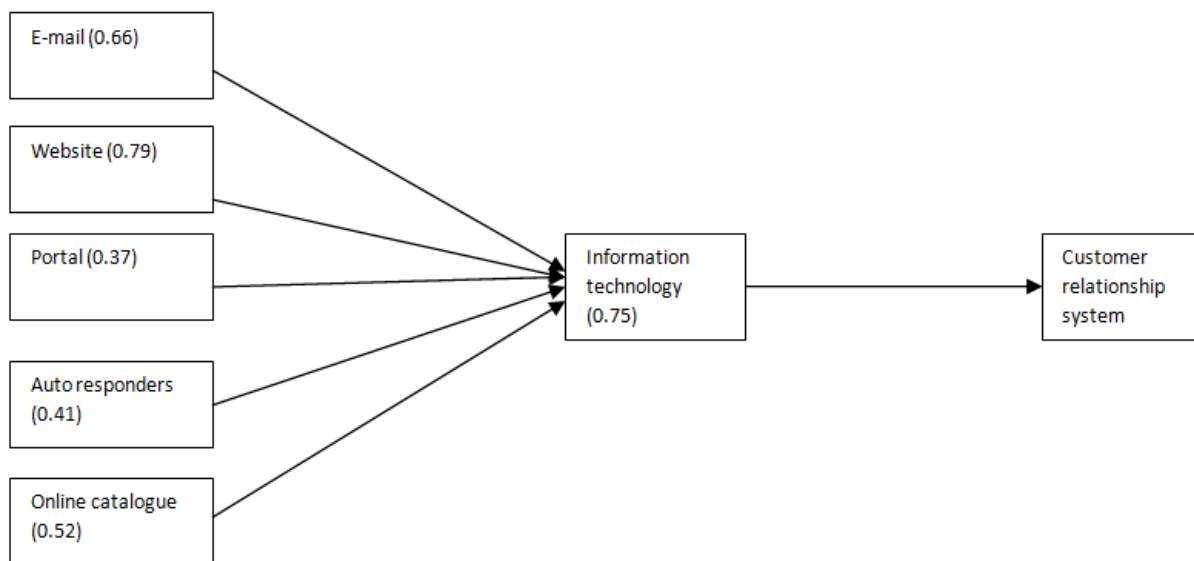
Diagram 2-1: The standardized coefficients of variables in Iran Khodrou agencies

As you can see in the diagram above, the website variable has the most effect and the variable of auto responders has the least effect on the customer relationship system.

RESULTS AND DISCUSSION

Analysis of Data and Findings

The main hypothesis: information technology has a positive and significant relationship with the customer relationship system. Emphasizing on the results derived from the research, the main hypothesis, the information technology has a positive and significant effect on the customer relationship management at the significance level of 0.045 and with the regression coefficient 0.72. So we can conclude that there is a serious relationship between the information technology and the customer relationship management, and the regression coefficients between the two aforementioned variables are of direct (positive) type; as a result, we can say that the information technology would influence the customer relationship management and from the perspective of staff and managers, the more promoted the information technology results, the more inclined toward positivity the customer relationship management would be. So the hypothesis will be supported.

The first sub-hypothesis: e-mails have a positive and significant effect on the customer relationship system. Emphasizing on the resultants of research, the first sub-hypothesis, emails have a positive and significant effect on the customer relationship management at the significance level of 0.017 and with the

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regression coefficient of 0.64. Therefore, we can conclude that there is a serious relationship between e-mail and the customer relationship management and the regression coefficients between the two mentioned variables are direct (positive); so we can state that e-mail would influence the customer relationship management and from the perspective of staff and managers, the more promoted the e-mails, the more inclined to positivity the customer relationship management would be. So the hypothesis will be supported.

The second sub-hypothesis: websites have a positive and significant effect on the customer relationship system. Emphasizing on the resultants of research, the second sub-hypothesis, websites have a positive and significant effect on the customer relationship management at the significance level of 0.037 and with the regression coefficient of 0.77. Therefore, we can conclude that there is a serious relationship between websites and the customer relationship management and the regression coefficients between the two mentioned variables are direct (positive); so we can state that websites would influence the customer relationship management and from the perspective of staff and managers, the more promoted the websites, the more inclined to positivity the customer relationship management would be. So the hypothesis will be supported.

The third sub-hypothesis: the online catalogues have a positive and significant effect on the customer relationship system. Emphasizing on the resultants of research, the third sub-hypothesis, online catalogues have a positive and significant effect on the customer relationship management at the significance level of 0.027 and with the regression coefficient of 0.56. Therefore, we can conclude that there is a serious relationship between online catalogues and the customer relationship management and the regression coefficients between the two mentioned variables are direct (positive); so we can state that online catalogues would influence the customer relationship management and from the perspective of staff and managers, the more promoted the online catalogues, the more inclined to positivity the customer relationship management would be. So the hypothesis will be supported.

The fourth sub-hypothesis: portals have a positive and significant effect on the customer relationship system. Emphasizing on the resultants of research, the forth sub-hypothesis, portals have a positive and significant effect on the customer relationship management at the significance level of 0.041 and with the regression coefficient of 0.31. Therefore, we can conclude that there is a serious relationship between portals and the customer relationship management and the regression coefficients between the two mentioned variables are direct (positive); so we can state that portals would influence the customer relationship management and from the perspective of staff and managers, the more promoted the portals, the more inclined to positivity the customer relationship management would be. So the hypothesis will be supported.

The fifth sub-hypothesis: the auto responders have a positive and significant effect on the customer relationship system. Emphasizing on the resultants of research, the fifth sub-hypothesis, the auto responders have a positive and significant effect on the customer relationship management at the significance level of 0.031 and with the regression coefficient of 0.43. Therefore, we can conclude that there is a serious relationship between the auto responders and the customer relationship management and the regression coefficients between the two variables mentioned are direct (positive); so we can state that auto responders would influence the customer relationship management and from the perspective of staff and managers, the more promoted the auto responders, the more inclined to positivity the customer relationship management would be. So the hypothesis will be supported.

Discussion and Conclusion

The findings of previous studies show that the information technology has a positive and significant effect on the customer relationship management. For success in the information technology world and the electronic world, the first and most important stage is planning for identifying the customers. The developing organizations have also adopted some modern methods in using the information technology for serving the customers. All the organizations are in search of attracting customers and increasing their satisfaction. This issue is specifically important in banking and also in the industries which are in perpetual relationship with customers; on the other side, the competitions among various organizations

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are being increased. Engendering various channels for keeping the present customers and attracting new customers is highly important for organizations. This is why whenever technology adds new dimensions to the organizational systems, the speed of these changes created as a result of technology changes, free and close operation of the global markets, enhancing the innovations, reduction of life cycle of productions and fading away of time and place distances in the IT space have been brought about. Consequently, the organizations have been encountered the markets whose unique feature is the intense competition and the new increasing needs of their customers.

Considering the results obtained from studying the information technology system in relation with the customer relationship system in Iran Khodrou centers, you may come to the conclusion that the suggested model by this research is an applied and proper model and its variables have a positive and significant effect on the customer relationship system, and from the point of view of staff and managers the variable of website was capable to create the greatest effect on the customer relationship system, and the variable of portal has had the least effect on that system. One of the reasons of the scanty impact of this variable can be lack of familiarity with portals by the customers who might have very limited information about that variable; the managers of Iran Khodrou can increase their customers' information through designing some advertising plans. This research has some suggestions in that regard which are presented in a performative format for future: in the primary hypothesis of the information technology, utilizing professionals in training the staff and installing the MIS system in the corporation, advertising and informing the customers about the communication ways and/or for sending their requests, suggestions or criticisms of the staff's performance and the procedure of actions, engendering constant relations with customers for introducing new products and services through sending mails, sending online catalogues through MMC, installing some backup systems as: ESS and DSS, enhancing the capacity of simultaneous responsiveness to customers during the contact times and reducing the internetwork options for communication with authorities.

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