KISDI
KOREA INFORMATION SOCIETY DEVELOPMENT INSTITUTE

Asian Journal of Information and Communications

The influence of information technology on establishing customer relationship management in Iran's digital banking

Ali Tajdin*
Mazandaran University
of Science and Technology

Babak Shirazi**
Mazandaran University
of Science and Technology

Abstract

 Investing on IT is one of the involved subjects in all organizations, especially banks. IT has a key role in organizations business, and on the other hand customer relationship management (CRM) focuses on customer data, and applying IT will facilitate its career. The CRM is a modern and developed tool for data analysis from customer data and in fact we can say that IT is a necessary and essential element in CRM. So we deal with the study of influence of IT on establishing customer relationship management. The studied statistical universe of the paper equals 400 persons that based on Morgan table. 198 persons have been computed as statistical sample, and finally we deal with and analyze research hypothesis by suitable statistical tests. In this research we have concluded that the benefit obtained from IT has significant effect on establishing customer relationship management in bank. Finally, we have presented suggestion to improve the level of applying software of CRM in bank.

Keywords: information technology, customer relationship management, customer servicing

1. Introduction

Many businesses have found the importance of CRM and its potential for organization to obtain competitive advantage. These organizations are making change in their business processes as well as technical that enable them to attract new customers, retain current customers and maximize their time period. CRM must be seen on management system. Holistic approach toward CRM, helps organizations to make consistency and pay effectively into contact points or communication channels with different customers. Of course, there are problems and difficulties related to customer s different experiences of different channels of sales (Peppard, 2000). A research that was conducted in an institute of strategic planning in Washington D.C shows that 20% of banks almost have paid attention into their customers' needs twice the banks that haven't According to the other research by Bob Smite the authority in Smite marketing research center in Kentucky, the satisfied customer informs three to five other persons about his/her own bank, although the unsatisfied customer talks about the bad experience that he/she has had in a bank with 15 to 20 persons. Thus, putting value on people ideas has been considered the best style of marketing and the most important problem in banking is to attract customer satisfaction. During some past decades, changes in delivery were made and since 1980 by entering the relational

_____

 * Corresponding authors: ali_tajdin@ustmb.ac.ir
** shirazi_b@icloud.com

business and its multiple applications, some changes were made and banking industry was under the influence of those changes (Gilbert and Choi, 2003). They emphasized that bank as financial and services enterprises are in direct communication with customers proceed to deliver their services and product. So in today competitive market, in order to adopt different strategies of competitors, it is needful to collect customer s behavioral information, even satisfied and loyal customers, because finally if we stand in change highway, someone will pass us (Drucker, 1995).

A predominant example of this, is the competition of banks to adjust its rate of deposit interest. Change in customer behavior in banks has had greater sensitivity due to monetary nature of their activities and need precise and timely planning by managers of bank networks. Customer relationship management in banks can be obtained by creating and maintaining personal relation with profitable customers of bank through customer accounts, by using appropriate information and communication technology, process of supervising customers, data management and evaluation (Gilbert and Choi, 2003). CRM is a word that includes types of methodology, software and internet capabilities that help in managing and method of communicating with customers (marketing, ordering and sale) in an organization (Mahdavi et al., 2008). For example, the firm may make a data base about customers and determiners the manner of communication with sufficient details so that management, sale agent and service deliverers and even customers can access to data directly. CRM is a modern and developed tool to data analysis of customer data and in fact we can say that IT is an essential and necessary element in CRM. By applying the tools of modern IT we can collect useful information to customers as input and then examine the collected data and do the needed processes in the section of customer relation of organization(Kumar, 2010).

2. Research methodology

In the past, manner of interaction of organization with customer was examined in case of CRM concept. But nowadays, IT has had significant effects on different sections of an organization, special manner of interaction of organizations with customers so that IT tools are being used widely in CRM. Nowadays business world has converted to a dynamic and more competitive environment and different organizations face vast challenge of their market share and finding new ways to attract, attain, support and retain customers to increase income. Moreover, organizations are seeking increase in productivity, reduce cost and increase in their share value. CRM is a valuable tool to help these endeavors.

2.1 Advantages of using IT in CRM

. Increase in customer loyalty
. More effective marketing
. Improve services to customer and support
. Higher efficiency

2.2 CRM advantages

The strategic advantages obtained through applying CRM will have the most influence when its design and performance give confidence. The best way, help to realize this important affair is to use concepts of knowledge management in designing CRM. In designing CRM, it must be inspired of knowledge management architecture increasingly (Malhotra, 2001; Sahebjamnia et al., 2016).

2.3 CRM objectives

Scholars identified three objectives for organizational frameworks based on integrated framework for business strategic management as follow (Hadighi et al., 2013):
1. Using communication with present customers to increase income
2. Using integrated information for superior services
3. Introducing repetitive consistent processes and methods

2.4 CRM in banks

In many ways the banks are not different from other business: the objective of business is to provide profitably. Banks, however, present some special features that distinguish them from other companies. Implementing this requires a specific approach in banks. Microsoft Dynamics CRM is suitable for implementation in banks, and the Chara Software methodology is a good approach(Vasiliu, 2012).

Table 1. Implementation of Microsoft Dynamics CRM in banks

Factors	Impact
Market related factors competition between banks, standardization of products and services, markets saturation, maturation.	CRM strategy has become a critical factor in customers attracting and retaining.
Factors related to customer lower efficiency of mass marketing and increase the relevance of one-to-one relationships.	The customer becomes king: he has access to arrange of personalized banking products, he can better evaluate the acquisition compared to other offers (including the using of specialized free sites), and he can request personalized service and a high level of service after purchase.
Factors related to business Pareto rule is applied. 80% of profits are made by 20% of customers. Acquiring new customers is more expensive than retaining and developing existing customer base.	Providing real value added services to customers is the source of real competitive advantage for the bank
Factors related to technology	IT and the Internet allow the use of new channels of intelligence and data mining, etc.

Source: Buttle (2009)

During some past decades change in delivery channels, has revaluated banking industry. Since 1980, by entering into relational business and its multiple applications, some change was obtained and banking industry was affected.

Actions that banks must take in implementing CRM include:
1. Identifying CRM designs by referring to obtained objectives (e.g. increase in customer number, increase in profitability, in each customer, etc)
2. Determine measurable objectives for each innovation with respect to interest growth, customer number, etc.
3. Examining and selecting appropriate CRM

In order to study the effect of establishing IT on CRM, a model was used that was presented by Bahrami et al.(2012), when applying accurate and update IT and direct relation which have with CRM software, we can witness that significant effects in advancing to provide customer satisfaction. In this research it is tried to study

the effect of IT as a key factor, in CRM. In this article, at first we named eight branches of IT productivity benefits and then we dealt with the study of their influence on CRM in banks.

Figure 1. The proposed conceptual model
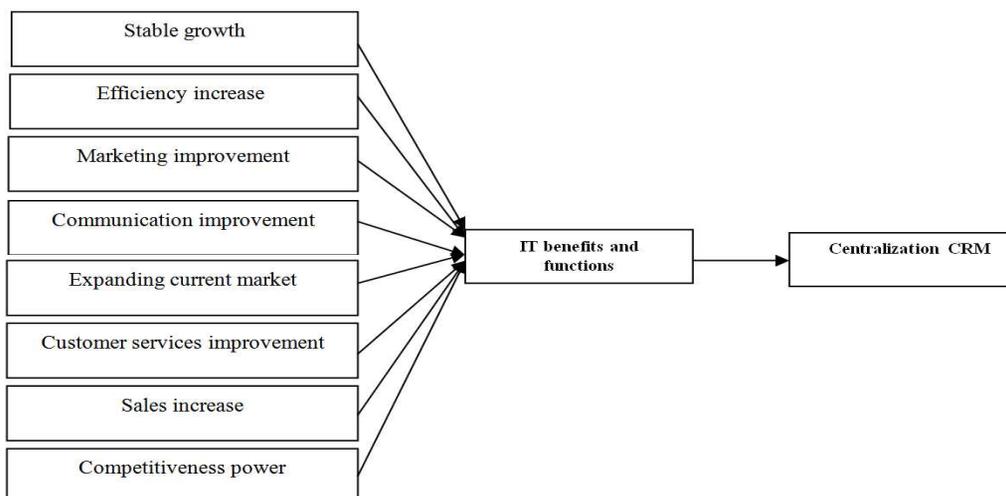
This conceptual model represents the effects of IT investment in organizational productivity. According to this conceptual model with correct investment on IT and also placing IT a organizational property and on-time usage, we will witness tangible and intangible effects on organizing different affairs such as improving the performance CRM. So we will deal with this subject with the effect of conceptual model (Bahrami et al., 2012).

2.5 Research hypothesis

In this study we seek for hypothesis in order to examine the benefits obtained from IT on establishing CRM and conclusions and implement it in organizational environment, especially banks.

2.6 Main hypothesis

IT has influence on establishing CRM in banks.

2.7 Secondary hypothesis

1. Technical improvement has influence on establishing CRM in banks
2. Increase in efficacy and cost reduction have influence on establishing CRM in banks
3. Marketing development has influence on establishing CRM in banks
4. Relation development has influence on establishing CRM in banks
5. Market development has influence on establishing CRM in banks
6. Improvement in delivering services to customer has influence on establishing CRM in banks
7. The competitive power has have influence on establishing CRM in banks
8. Increase in sale has influence on establishing CRM in banks

2.8 Data analysis

Methodology with respect to objective is applied. Generally the objective of applied researches is to discover new knowledge to provide certain application about certain subject. This article is descriptive in idea viewpoint and has been done in library method. Statistical universe of present study includes all managers and general staff of Refah bank of central section of Mazandaran province. It includes knowledge managers and staff that according to Morgan table 198 persons were determined as statistical sample of research. Since in this research view statistical universe and sample are presumed equal and integrated with respect to have information in different levels, so with a similar characteristic, samples are selected randomly. In this research, in the manner of determining and setting questionnaire, it is tried to use a method which leads into the desirable result. So a questionnaire was prepared with 20 items. Among these items 5 items were general and 15 personal questions. The method of scoring was from very low to very high that were 1 to 5 respectively. Questionnaires were 198 people. This way was used to compute internal consistency of measuring tool which measures different features. So at first a primary sample includes 30 questionnaire were pretested and then by the data obtained these questionnaire and with the help of statistical software of SPSS confidence factor has been computed for this tool by kcronbach alpha output of the software for questionnaire items is 0.76 respectively, thus test has acceptable reliability.

2.9 Result

2.9.1 Descriptive results

From 198 respondents in the study, 63 person (32%) were male and 135 (68%) were female. About their education level, it can be said, about 40 persons have diploma, 69 persons have upper diploma, 74 persons have bachelor degree and 15 persons have upper bachelor degree. About the age of respondents can be stated that 28% are below 30 years old, 20% between 30-35 years old, 40% between 35-45 years old and 12% upper more than 45 years old.

2.9.2 The analysis of statistical tests (inferential statistics)

After describing the demographic variables and derived results from the statistical community, in this section we test the proposed hypotheses (Secondary hypotheses) and statistical used will be paid.

1) Statistical hypothesis related to test hypotheses 1

Question 1: Is technological progress has influence on establishment of CRM in the Refah central bank in Mazandaran province?
H_0: Technical improvement has no influence on establishing CRM in banks
H_1: Technical improvement has influence on establishing CRM in banks

Table 2. t test related to test hypotheses 1

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.8129	0.6318	0.7222	0.000	197	15.754

Given that the level of significance in hypotheses 1 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

2) Statistical hypothesis related to test hypotheses 2

Question 2: Is increasing efficiency and cost reduction has influence on establishment of CRM in the Refah central bank in Mazandaran province?

H_0: Increase in efficacy and cost reduction have no influence on establishing CRM in banks

H_1: Increase in efficacy and cost reduction have influence on establishing CRM in banks

Table 3. t test related to test hypotheses 2

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.5345	0.3140	0.4242	0.000	197	7.588

Given that the level of significance in hypotheses 2 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

3) Statistical hypothesis related to test hypotheses 3

Question 3: Is the development of marketing has influence on establishment of CRM in the Refah central bank in Mazandaran province?

H_0: Marketing development has no influence on establishing CRM in banks

H_1: Marketing development has influence on establishing CRM in banks

Table 4. t test related to test hypotheses 3

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.6148	0.4801	0.5474	0.000	197	16.022

Given that the level of significance in hypotheses 3 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

4) Statistical hypothesis related to test hypotheses 4

Question 4: Is the development of communication has influence on establishment of CRM in the Refah central bank in Mazandaran province?

H_0: Relation development has no influence on establishing CRM in banks

H_1: Relation development has influence on establishing CRM in banks

Table 5. t test related to test hypotheses 4

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.4433	0.2402	0.3417	0.000	197	6.637

Given that the level of significance in hypotheses 4 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

5) Statistical hypothesis related to test hypotheses 5

Question 5: Is the development of market has influence on establishment of CRM in the Refah central bank in Mazandaran province?
H_0: Market development has no influence on establishing CRM in banks
H_1: Market development has influence on establishing CRM in banks

Table 6. t test related to test hypotheses 5

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.6949	0.4836	0.5892	0.000	197	11.000

Given that the level of significance in hypotheses 5 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

6) Statistical hypothesis related to test hypotheses 6

Question 6: Is the improvement in delivering services to customer has influence on establishment of CRM in the Refah central bank in Mazandaran province?
H_0: Improvement in delivering services to customer has no influence on establishing CRM in banks
H_1: Improvement in delivering services to customer has influence on establishing CRM in banks

Table 7. t test related to test hypotheses 6

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.6130	0.3937	0.5033	0.000	197	9.025

Given that the level of significance in hypotheses 6 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

7) Statistical hypothesis related to test hypotheses 7

Question 7: Is the competitive power has influence on establishment of CRM in the Refah central bank in Mazandaran province?

H_0: The competitive power has no influence on establishing CRM in banks
H_1: The competitive power has influence on establishing CRM in banks

Table 8. t test related to test hypotheses 7

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.6147	0.4055	0.5101	0.000	197	9.619

Given that the level of significance in hypotheses 7 is less than 0.05, it can be concluded that significant at the level of 95 %, hypotheses H_0 is rejected.

8) Statistical hypothesis related to test hypotheses 8

Question 8: Is the increase in sale has influence on establishment of CRM in the Refah central bank in Mazandaran province?

H_0: The increase in sale has no influence on establishing CRM in banks
H_1: The increase in sale has influence on establishing CRM in banks

Table 9. t test related to test hypotheses 8

Confidence interval (95%)		Mean of difference	Level of Significance	D.F	T
Upper Limit	Lower Limit				
0.6213	0.4703	0.4865	0.000	197	8.423

Given that the level of significance in hypotheses 8 is less than 0.05, it can be concluded that significant at the level of 95%, hypotheses H_0 is rejected.

3. Discussion and conclusion

As it mentioned in result section, in relation to examine the impact of the benefits of information technology (IT) for the establishment of customer relationship management in Refah bank in Mazandaran province, 8 hypothesis tested and H_0 hypothesis for all of them significant at the level of 95%, is rejected and H_1 hypothesis is accepted. Given the findings of the study, the result has been obtained that IT variable has influence on customer relationship management (CRM) and use of information technology has many advantages on the performance of the customer relationship management in the organization. For example, effective communication with the customer caused customer satisfaction and loyalty and also created a competitive advantage for the organization. On the other hand, customer satisfaction and loyalty are the main motivation in an organization's performance. According to research results some suggestions are presented as follows:

. The study of effect of establishing CRM on social and economical benefits of organizations
. The study of organization strategies on establishing CRM system in organizations
. Measure of the amount of infrastructure and qualified customer orientation of customer information in CRM system in other organizations
. The study of role of human resource in increasing performance of relation with customer in CRM system in organizations

References

Bahrami, M., Ghorbani, M. and Arabzad, S. M. (2012). Information technology (IT) as an improvement tool for customer relationship management (CRM). *Procedia-Social and Behavioral Sciences, 41*, 59-64.

Buttle, F. (2009). *Customer Relationship Management: Concepts and Technologies*. Routledge.

Drucker, P. F. (1995). *People and Performance*: *The Best of Peter Drucker on Management*, Routledge.

Gilbert, D. C. and Choi, K. C. (2003). Relationship marketing practice in relation to different bank ownerships: a study of banks in Hong Kong. *International Journal of Bank Marketing, 21*(3), 137-146.

Hadighi, S. A., Sahebjamnia, N., Mahdavi, I., and Shirazi, M. A. (2013). A framework for strategy formulation based on clustering approach: a case study in a corporate organization. *Knowledge-Based Systems*, *49*, 37-49.

Kumar, V. (2010). *Customer Relationship Management*. Wiley Online Library.

Mahdavi, I., Cho, N., Shirazi, B., and Sahebjamnia, N. (2008). Designing evolving user profile in e-CRM with dynamic clustering of Web documents. *Data & Knowledge Engineering, 65*(2), 355-372.

Malhotra, Y. (2001). Knowledge assets in the global economy: assessment of national intellectual capital. *Knowledge Management and Business Model Innovation, 8(3)*, 232-249.

Peppard, J. (2000). Customer Relationship Management (CRM). *Financial Services. European Management Journal. 18*. 312-327.

Sahebjamnia, N., Torabi, S. A., and Mansouri, S. A. (2017). A hybrid decision support system for managing humanitarian relief chains. *Decision Support Systems, 95*, 12-26.

Vasiliu, D. M. (2013). Approach to Customer Relationship Management (CRM)-the new key sales success. *The USV Annals of Economics and Public Administration*, *12*(1(15)), 144-153.