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► **To cite this version:**

Jehad J Badwan, Mazen J Al Shobaki, Samy S Abu Naser, Youssef M Abu Amuna. Adopting Technology for Customer Relationship Management in Higher Educational Institutions. *International Journal of Engineering and Information Systems (IJEAIS)*, 2017, 1 (1), pp.20 - 28. hal-01500365

**HAL Id: hal-01500365**

**<https://hal.science/hal-01500365>**

Submitted on 6 Apr 2017

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# Adopting Technology for Customer Relationship Management in Higher Educational Institutions

Jehad J. Badwan<sup>1</sup>, Mazen J. Al Shobaki<sup>2</sup>, Samy S. Abu Naser<sup>3</sup>, Youssef M. Abu Amuna<sup>4</sup>

<sup>1</sup>Al Quds Open University, Gaza-Strip, Palestine

<sup>2,3,4</sup>Department of Information Technology, Faculty of Engineering & Information Technology, Al-Azhar University, Gaza-Strip, Palestine

<sup>1</sup>jehad.badwan2018@gmail.com, <sup>2</sup>mazen.alshobaki@gmail.com, <sup>3</sup>abunaser@alazhar.edu.ps, <sup>4</sup>yabuamuna@gmail.com

**Abstract**— *The aim of this paper is to evaluate the critical success factors and investigate the benefits that might be gained once implementing Electronic Customer Relationship Management at HEI from students' perspective. The study conducted at Al Quds Open University in Palestine and data collected from (398) students through a questionnaire which consists of four variables.*

*Some statistical tools were used for analyzing the data and testing the hypotheses, including Spearman correlation coefficient for Validity reliability correlation using Cronbach's alpha, Frequency, and Descriptive analysis.*

*The overall findings of the current study show that all the features were important for student and it was critical success factors, at the same time, websites were providing all the features discussed by the theory whereas students showed their willingness to use those features if provided. It is also discovered that implementing Electronic Customer Relationship Management can cause customer satisfaction, loyalty, retention and high service quality as students pointed to be a customer.*

*Research limitations: The survey findings were based on QOU students in Palestine. UAE and KSA branches are not included in the study.*

**Keywords**— Electronic Customer Relationship Management; Staff retention; HEI

## 1. INTRODUCTION

The basic premise upon which CRM rests is that understanding customer needs and enhancement of their experience is the key to customer retention, organization growth and profitability. In effect, although both current and prospective customers are important to a business, to retain one existing customer is 5 to 6 times more cost effective than attracting one new customer (Abubakae & Mukhtar, 2015).

The global higher education (HE) market is well established especially in the United States, United Kingdom, and other English speaking countries such as Canada and Australia where marketing departments occupy distinctive positions in the organizational structure of HEIs (Ramachandran, 2010).

In Palestine, with a total of (47) accredited HEIs intense competition among them is evident especially with weak economic and poor labor market.

The need to develop strategies for the attraction and retention of students by Palestinian HEIs considered as a strategic orientations.

Customer relationship management (CRM) has become a component part of business strategy and is not considered only as a marketing tool. The strategy supports management decision making, while using the existing information in the organization and, more importantly, the use of information technology for the marketing programs of the organization.

In order to achieve better results, higher Education Institutions (HEI) adopting CRM (Customer Relationship Management) strategy. Like executives in industries of other business sectors, HEI's managers, by adopting CRM initiatives, intend to increase performance, promote better management practices, and improve the HEI's relationship with current and potential students. The objective of this study is to gain better understanding of Electronic Customer Relationship Management and its benefits to employee in Al-Quds Open University in Electronic Customer Relationship Management implementation in Al-Quds Open University.

**In view of the literature review, the study raises the question of:**

**Q1.** How far Electronic Customer Relationship Management in Al-Quds Open University is adopted?

## Q2. How does Electronic Customer Relationship Management effect on retain and attract students in the HEIs?

The importance of this research emerged from the revolution of electronic system that injected in all fields including educational scheme. This study strives to measure at which level Al-Quds Open University is in line with the updated technology. Highlighting these factors is expected to support the decision makers in our universities to be able to survive and maintain its competitive advantage.

Moreover, this research is expected to highlight the positive features resulting from electronic customer relationships management application that is expected to improve the long-term relationship between the students and HEIs.

## 2. LITERATURE REVIEW

### 2.1 Customer relationship management:

Customer relationship management is “A comprehensive strategy and process that enables an organization to identify, acquire, retain and nurture profitable customers by building and maintaining long-term relationships with them” (Adikram, 2016, Oluseye et al., 2014, Wahab et al., 2011). The Customer relationship management definition follows from relationship marketing and is elicited as the values and strategies of relationship marketing with particular emphasis on customer relationships turned into a practical application.

Rigo et al. (2016), Adikram (2016) & Wali et al. (2015) define Customer relationship management in HEIs as "Satisfaction customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some needs, goals or desires".

Customer Relationship Management strategy connects three fundamental dimensions of organizations, strategy, philosophy and technology. In addition, the success of Customer Relationship Management strategy depends on the right balance between three important organizational resources, people, technology and processes. Only by working effectively with these three resources will organizations be able to use Customer Relationship Management to achieve high levels of customer satisfaction, retention and loyalty. (Rigo et al., 2016, Manzuma-Ndaaba, et al., 2016).

Azila & Noor (2011) confirmed that "Customer relationship management is a new concept within businesses that has increased its importance dramatically over the last few years, and will continue to do so in the future. Customer Relationship Management exists to replace the traditional 'four Ps' of marketing (product, price, place and promotion).

### 2.2 Electronic customer relationship management:

Electronics customer relationship management is an approach used by organizations to enable them identify and draw customers that are potentially profitable. Organizations are now seeking supplementary and effective relationship activities in order to increase the value of their customer relationships by improving relationship quality or delivering better relationship benefits (Safari et al., 2016, Usman et al., 2012).

Organizations benefit from electronic customer relationship management through increased customer satisfaction and loyalty, online shopping, and website support. A successful electronic customer relationship management requires attraction and retention of economically valuable customers such that it could preserve highly precious and economically valuable customers as well. According to previous studies, electronic customer relationship management is the strengthening of traditional customer relationship management through implementing its methods in e-business markets (Navimipour & Sultani, 2016, Sistar & Sadeghi, 2016, Safari et al., 2015).

To be able to satisfy and even exceed customers' expectation requires 360 degrees view of the customer. This calls for electronic customer relationship management implementation model that integrate the key dimensions of people, Business process, and technology within the context of an enterprise-wide customer-driven, technology-integrated, cross-functional organization. Each component presents significant challenges, but it is the ability to integrate all three that makes or Breaks a customer relationship management system (Safari et al., 2016, Rigo et al., 2016, Azila & Noor, 2011)

According to Mendoza et al. (2007), customer relationship management must be conceived as a strategy, due to its human, technological, and processes implications, at the time an organization decides to implement it.

### 2.3 Electronic Customer Relationship Management vs. Customer Relationship Management

The differences between customer relationship management and Electronic Customer Relationship Management as mentions by many authors are minor and obvious; the definition for Customer Relationship Management and Electronic Customer Relationship Management is almost the same except Electronic Customer Relationship Management uses the internet as a tool or medium. Most of the researchers and practitioners agree that Electronic Customer Relationship Management is a business strategy that applies the technology power to tie together all aspects of a company's business to build long-term customer relationship and customer loyalty

(Rigo et al., 2016, Safari et al., 2016, Wahab et al., 2011). Generally, Customer Relationship Management is essential and vital function of customer oriented marketing. Its function includes gathering and accumulating customer –related information in order to provide effective services. Electronic customer relationship management concerns all forms of managing relationships with customers making use of Information Technology (IT). Aim of Electronic Customer Relationship Management system is to improve customer service, develop a relationship and retain valuable customers (Darajeh and Tahajod, 2010). According to Faed et al. (2010) electronic customer relationship management establishes and enhances the traditional customer relationship management techniques by integrating technologies of new online channels, such as Web, wireless, and voice technologies, and integrates them with online business applications into the complete customer relationship management strategy.

#### **2.4 Electronic Customer Relationship Management in Higher Education**

Today's marketing focus is not so much on getting "buyers" as on customer satisfaction, giving them what they want and cultivating a relationship with them that is not just strictly commercial, unilateral and impersonal. Thus, the adoption of customer relationship management by educational institutions brings with it the use of appropriate instruments to acquire greater knowledge of the needs of students in terms of training, to help organize services tailored to their characteristics and requirements, to improve the process of education and get better results that reduce the number of dropouts (Rigo et al., 2016, Adikram, 2016, Wali et al., 2015, Abubakae & Mukhtar, 2015, Wahab et al., 2011).

Higher Education Institutions adopting electronic customer relationship management to increase performance, promote better management practices, and improve the HEI's relationship with current and potential students, especially in executive education.

An educational electronic customer relationship management system helps HEIs to have a holistic understanding of students' needs as it gathers customer knowledge collected in all phases of student interaction phases (admission, registration, fee payment, course conclusion, etc..(Abubakar & Mukhtar, 2015).

However, the concept of consumerist in HEI should be in relationship marketing rather than transactional marketing. Though, students are liken to customers but the nature of education services particularly length of consumption suggest building a relationship instead of "buy and pay" approach (Manzuma-Ndaaba, et al., 2016).

#### **2.5 People, process and technology**

Customer Relationship Management (CRM) strategy connects three fundamental dimensions of organizations, strategy, philosophy and technology. In addition, the success of CRM strategy depends on the right balance between three important organizational resources, people, technology and processes. Only by working effectively with these three resources will organizations be able to use CRM to achieve high levels of customer satisfaction, retention and loyalty (Rigo et al., 2016, Navimipour & Sultani, 2016, Khan & Kamal, 2015).

#### **2.6 People**

The educational environment is not only extremely dynamic but it is also challenging. Competition is intensifying in HEI sector, in both public and private provision.

On the question of people as a resource, as they adopt CRM strategy, organizations should get their employees committed to a customer-centered strategy (Rigo et al., 2016, Khan & Kamal, 2015).

Students may be positioned as customers have been a feature of the academic literature for over 20 years (Tight, 2013). This topic is situated within broader discussions around the partial reordering of universities' modus operandi, whereby the sector is becoming larger, more financially oriented and less publicly funded than before (Budd, 2016, Latif et al. 2015).

Some of the hallmarks of universities subject to neoliberal policies such as tuition fees, rankings, and student surveys, encourage students to orient themselves in particular ways towards their degrees. The emergence and growth of these features represents a philosophical realignment in how a higher education is framed, that is as a means of reaching immediate, instrumental goals rather than as a component of one's long term, intellectual development (Latif et al., 2015, Tight, 2013).

Identifying the factors that influence student satisfaction is critical for educational institutions. Alves & Raposo (2009) developed a satisfaction construct using seven variables which include: program effectiveness, quality of lecturers and teaching, student learning, assessment and feedback, learning resources, use of technology and facilities/quality of social life.

Reliable measurements of student satisfaction will enable educational institutions to have a clear view of their existing situation and allow comparisons with other educational institutions (Yusoff et al., 2015).

**2.7 Technology infrastructure**

The second fundamental resource in CRM strategy is technology since Information Technology (IT) usually brings significant contributions to enhance business and organizational processes. In fact, one of the main results of implementing CRM strategy is changing and creating processes. As (Beldi, et al. 2010) affirm, “CRM strategy is transversal and affects the organization as a whole”. CRM effects demand the review of all processes involved directly or indirectly with customer relationship, so they become more customer-oriented and more efficient (Khan & Kamal, 2015).

Technological change has shifted competition from price and core service to value-added services". Likewise Farida and Magiswary (2010) introduced that the rapid development in the Internet technology has accelerated the support of Customer Relationship Management (CRM) systems to customers. Hence, electronic CRM (E-CRM) systems emerged.

Student support facilities consist of the information technology (IT) facilities and the learning resources center overall, implementing technology through all parts of HEI, so the value brought to them is higher.

**2.8 Process**

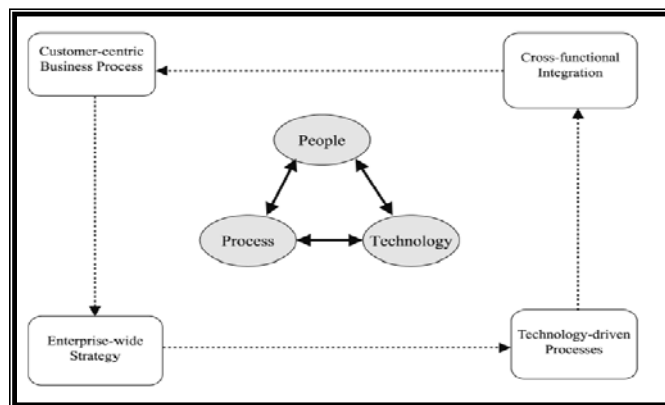
The third fundamental resource of CRM strategy is process. CRM is definitely a means for organizations to obtain a competitive advantage, since, as they invest in CRM strategy, they add customer value, consequently improving their performance (Safari et al., 2016, Navimipour & Sultani, 2016). According to Mendoza et al. (2007), the main business processes that should be addressed in CRM implementation are: marketing, sales, and services. It is important to emphasize that these process (marketing, sales, and service) are not the only processes in which the client is involved; nevertheless, these processes are the most common, and happen more frequently in a CRM strategy, regardless of the economic sector in which the organization functions.

In HEIs, services are the core of their process and business model. Starting from registration process, programs, learning, fees, scholarship, research, community service, and social network. In such dynamic environment, customer satisfaction and service quality lead to loyalty and those three variables are a good measure for HEI performance (Adikram, 2016, Manzuma-Ndaaba, et al., 2016).

e-CRM is becoming a core business strategy for HEIs. Customer relationships will have to further strengthen in order to understand students better and service them in an efficient and effective manner (Lipiäinen, 2015).

**3. STUDY HYPOTHESIS**

Customer relationship management implementation model that integrates the three key dimensions of people, process, and technology within the context of an enterprise-wide customer-driven, technology-integrated, cross-functional organization is proposed in Figure 1.1. Managing a successful customer relationship management implementation requires an integrated and balances approach to technology, process, and people (Chen and Popovich, 2003).



**Figure 1.1:** The conceptual framework

**Source:** (Chen & Popovich, 2003)

Based on the existing theoretical framework and the previous literature review, the followings are the research hypotheses:

**H1.** There is a significant positive relationship at 5% level between the critical success factors and success of Electronic Customer Relationship Management implementation from student perspectives.

**The following sub hypotheses stem from the first hypothesis:**

**H1.1** There is a significant positive relationship at 5% level between the people capability and success of Electronic Customer Relationship Management implementation from student perspectives.

**H1.2** There is a significant positive relationship at 5% level between the process effectiveness and success of Electronic Customer Relationship Management implementation from student perspectives.

**H1.3** There is a significant positive relationship at 5% level between the technological infrastructure readiness and success of Electronic Customer Relationship Management implementation from student perspectives.

**4. RESEARCH DESIGN**

**4.1 Study population and sampling**

This study conducted at Al-Quds Open University in Palestine. QOU is a leader university in Palestine and Arabic region. It was the first one adopting Open Learning in 1991. The university was established in the West Bank and Gaza in 1991. Now, it operates twenty four study centers in major cities. To realize its objective of extending its services to the Arab World, the University established two study centers in the United Arab Emirates (UAE) in 1994, and another two study centers in were established in Saudi Arabia in 2002. The population of the study was (65.000) students in (22) branches, a stratified random sample was used in this research to examine the students and it was (398). The usable sample was (300), which makes the response rate (96.77%).

**4.2 Research instrument**

The dimension of the instrument which measure main success factors of electronic student relationship’s management was developed by the current authors with the help of other research literature (Abubakar & Mukhtar, 2015, Yazdanpanah, 2011, Mendoza et al., 2007, Popovich, 2003).

Also Trustees validity has been conducted by a group of expert in marketing, administration, education, IT and management field. Those statements were further revised and modified by the experts in a subsequent stage before drafting the final version of the questionnaire.

A five-point Likert scale of agreement was used for measurement, running from “Strongly Agree” to “Strongly Disagree”, with a Neutral category for scale midpoint.

**Table 1:** Research instrument

Dimension of e-CRM	No. of statements
Benefits of using electronic portal in managing students relationships	8
People capability to implement e-CRM	15
Appropriateness of process efficacy to implement e-CRM	12
Technological infrastructure readiness to implement e-CRM	12
<b>Total</b>	<b>47</b>

**5. STATISTICAL PROCEDURES**

Several statistical tools were used for data analysis and hypotheses testing, including reliability Correlation using Cronbach’s alpha, Spearman correlation coefficient for Validity, Kolmogorov-Smirnov test, nonparametric Tests (Sign test).

**5.1 Test of Normality for each field**

This test is used to check the normality of the data distribution and accordingly certain tests can be used.

**Table 2:** Kolmogorov-Smirnov test

Field	Statistic	P-value	P-value
The benefits of using the electronic portal in managing students' relationship.	0.793	0.000*	0.000*
People capability to implement electronic student relationship management	0.796	0.000*	0.000*
Appropriateness of process efficacy to implement electronic student relationship management	0.803	0.000*	0.004*
Technological infrastructure readiness to implement	0.834	0.000*	0.001*



Field	Statistic	P-value	P-value
electronic student relationship management.			
<b>All paragraphs of the questionnaire</b>	0.729	0.000*	0.009*

\* The distribution is not normally distributed at 0.05 level

According to the results of Kolmogorov-Smirnov test shown in Table 2, the data does not follow normal distribution as the critical P value (0.05) was higher than the values obtained which indicate that distributions for these variables are not normally distributed. Consequently, Non-Parametric tests will be used to perform the statistical data analysis.

## 6. VALIDITY AND RELIABILITY ASSESSMENT

### 6.1 Reliability assessment

The study adopted Cronbach's  $\alpha$  to measure the internal consistence reliability of the questionnaire. The results showed that Cronbach's  $\alpha$  value for all dimensions were  $> (0.5)$ . It indicated that the design of the questionnaire had a high internal consistency as shown in Table 3.

**Table 3:** reliability

Dimension	Reliability (Cronbach Alpha)	Validity	No. of Statements
Sub-d1	0.903	0.885	8
Sub-d2	0.932	0.796	15
Sub-d3	0.898	0.861	12
Sub-d4	0.938	0.909	12
<b>Total</b>	0.977	0.960	47

### 6.2 Structure Validity

It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of Likert scale.

**Table 4:** Correlation coefficient of each field and the whole of questionnaire

No.	Field	Spearman Correlation Coefficient	P-Value (Sig.)
1	The benefits of using the electronic portal in managing student's relationships.	.830	0.000*
2	People capability to implement electronic student relationship management	.826	0.000*
3	Appropriateness of process efficacy to implement electronic student relationship management	.910	0.000*
4	Technological infrastructure readiness to implement electronic student relationship management.	.925	0.000*

\* Correlation is significant at the 0.05 level

Table 4 clarifies the correlation coefficient for each field and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at  $\alpha = 0.05$ , so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

## 7. DATA ANALYSIS AND DISCUSSION OF RESULTS

T test used to examine the main dimension and hypotheses. The results of the analysis are shown in Table 5.

**Table 5:** T test for dimensions

Index	Dimension	MA	MAR	T	sig
1	Sub-d1	3.70	73.97	14.07	0.000*
2	Sub-d2	3.57	71.48	11.97	0.000*
3	Sub-d3	3.72	74.31	14.77	0.000*
4	Sub-d4	3.58	71.65	13.18	0.000*

The first sub-d1 was 73.97%, and this mean that student feel satisfaction when he/she use the website, they dealings website in appropriate time, and feel with continuous improvement in using the website.

The second sub-d2 71.48% and this mean that the staff is willing to share their colleagues the students' information to improve services, they participate in the university announced symposia and workshop on the electronic student relationship management philosophy, they own the sufficient skills to deal with the students electronically, and the staff has the communication skills with the students electronically.

The third sub-d3 was 74.31% and this indicate that that the university announces on its electronic website every new thing, guiding materials are available on the university website on how new visitors can use it. The university continually develops its electronic works for performance improvement. Two-direction communication ways are developed and there were significant positive relationship at 5% level significance between the process effectiveness and e-CRM implementation from student perspectives.

The last sub-d4 was 71.65% and this this proved that the university enabled student to update your information right through the website. it provided a database and updates it constantly. it provided an IT specialized team able to implement the electronic student relationship management. it provided electronic learning patterns via its The website to promote its outcome quality. Also the university provided new programs and software appropriate to the implementation of electronic student relationship management.

## 8. HYPOTHESIS TEST

Table 6 shows that the correlation coefficients equal (0.653, 0.550, 0.547) and p-value (Sig.) is less than 0.05. According to that we accept H 1.1, H1.2, H 1.3. This led us to the importance of the factors that were studied in the research to the success of electronic customer (student) relationship management.

**Table 6:** Hypotheses Test

Hypothesis	Spearman Correlation Coefficient	P-Value (Sig.)
H 1.1	.653	0.000*
H 1.2	.550	0.000*
H 1.3	.547	0.000*

\* Correlation is statistically significant at 0.05 level

## 9. CONCLUSION

The educational environment is not only extremely dynamic but it is also challenging. Competition is intensifying in HEIs. There is a great deal of discussion in the academic literature around how the current conditions in higher education frame students as customers. Student satisfaction and loyalty is part of HEIs strategy. To obtain this they adopted e-CRM.

The issue of e-CRM has increasingly become the identification of the success of the CRM implementation it allows organizations to obtain the maximum value from their e-business investment.

Adopting e-CRM initiatives to increase performance, promote better management practices, and improve the HEI's relationship with current and potential students is an essential effort.

The importance of people capability to implement electronic customer relationship management in HEIs plays a critical role of Electronic customer Relationship Management success.

Customer relationship management is currently seen as technology implementation through all the process in the organization. The results of the study show a good implementation for technology in QOU, which caused by a high developed infrastructure. This as a reflect leads to high process effectiveness.



Findings support the main hypothesis and its sub-hypotheses. The important factors effecting e-CRM studied in the research are the most important in HEIs. Those factors lead to customer satisfaction, retention, loyalty and high quality services.

Despite that, some authors debate that KM (Knowledge Management) and CK (Customer Knowledge) must be included in CRM studies (Abu Naser et. al., 2016; Navimipour & Sultani, 2016; Naser et. al. 2016; Rigo et al., 2016; Adikram, 2016).

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