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- Garg Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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IMPLEMENTATION OF CRM WITH INFORMATION TECHNOLOGY IN HIGHER EDUCATION

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ABSTRACT

Colleges at higher education levels are increasingly challenged to maintain student enrollment levels. Enrollment management programs to market the institution are growing in number and their efforts are paying off. Though enrollments in India might be rising on an average for almost all colleges due to demographical shifts, the quality of students is not standardized across all the colleges. Some colleges are more preferred while some lie at the bottom. The challenge is not only at the initial admission level. Once students arrive on campus, however, the challenge is to keep them there. Retention activities had focused traditionally on comprehensive orientation programs, in-depth student advising, and a variety of student-focused activities. Students expect information technology (IT) to be an integral part of their entire educational process and anticipate a higher level of access to information. From the "student-as-customer" perspective, an educational customer relationship management (CRM) system would provide interaction with all the traditional student touch points- admissions, registration, financial aid, etc. - through a single system that would facilitate a complete understanding of each student's unique situation. The paper describes that how customer relationship management practices can be successfully implemented by the use of information technology in the field of higher education. To support his views and literature the author also conducted a survey on different types of respondents and findings of the same have been presented here.

KEYWORDS
customer, higher education, information technology, relationship, student.

INFORMATION TECHNOLOGY AND CRM

Customer relationship management practices require support of information technology for successful implementation. Bose and Sugumaran (2003) have referred to Kohli (2001) and Shoemaker (2001) to point out that for information technology driven relationship management, the firm should obtain a customer's behavior, preference, needs, and buying patterns and on using that knowledge to set prices, negotiate terms, tailor promotions, add product features, and otherwise customize its entire relationships with each customer. Bose and Sugumaran (2003) have also pointed out that by integrating operational CRM data with knowledge an orginization can make truly customer-centric business decisions.

Although more and more organizations and companies have "begun to use the internet to obtain customer information in their database marketing processes to enhance customer relationship management" very few have employed sophisticated customer relationship management information systems as stated by Rowley (2002). Sanjay S. Kaptan (1998) in his study focused upon the role of growing technological systems, which have led to the close interaction between the consumers and organization. He concluded the customer relationship management is based on valuing customers on current and potential values by defining the new horizons, unleashing the power of customer information, creating values in the eyes of the customers, delivering the exceptional experience.

Peppers and Rogers (1993) highlighted a more popular approach with recent application of information technology is to focus on individual or one-to-one relationship with customers that integrate database knowledge with a long-term customer retention and growth strategy. The information technology systems that support the customer relationship management initiatives need to be chosen with careful consideration. They also discussed the issue of implementation of customer relationship management program as it is well known that implementation of a plan is more important than the plan. Well implementation of customer relationship management program results into increase in customer satisfaction, increase in customer loyalty, decrease in customer complaints, identifying profitable customers, measuring customer profitability, and measuring customer lifetime value. Dibb S. (2001) examined the impact of customer relationships on the performances of organizations (banks) and found that technological advances are changing the nature of marketing channels and finally concluded that organizations (banks) should treat the individual customer differently as every customer has different needs.

IMPACT OF INFORMATION TECHNOLOGY ON HIGHER EDUCATIONAL INSTITUTES

Emerging CRM process and technologies will drive the growth of new types of resources and services. Within the higher education enterprise, much of this new functionality is focused on student area. This exciting new level of student-related functionality and performance is having an impact on students as well as the administrative staff and management, the faculty, and the institution as a whole. The impact on each of the affected areas is detailed below (Kotler, Fox, 1995):

Students – The use of information technology in the implantation of CRM strategies allows students (1) higher level of access of information about their options, performance, and future, (2) technology resources are an integral part of students learning experience, and (3) virtual access to faculty and student services through web sites and email.

Administrator – A CRM business strategy for the administrative system of a college or university allows (1) self service system empowers administrators to rethink the investment of administrative resources, (2) responsibility shifts from administrators to students and faculty for information maintenance with self service system, and (3) administrative staff can focus on more productive, rewarding and satisfying activities such as, making personal connections with students and helping them plan for the future.

Faculty – The new learning environment supported by information technology can have a positive impact on the faculty members in many ways, such as (1) closely linked faculty and students services, dynamically sharing resources and strategies to enable student learning, (2) faculty can prepare custom learning options for students who are having difficulty, (3) faculty members can make immediate student referrals to key support programs, and (4) faculty curriculum planners develop an accurate picture of which technology resources truly make a difference in student learning.

Advancement – A CRM approach supported with Information technology helps an institution in advancement in many ways, such as (1) individualized marketing and sales techniques are applied to prospective donors whose connections to the institution have been established through some other relationship, such as that of an athletic supporter or music lover, (2) list of targeted customers can be automatically generated, and (3) advanced customer services and marketing techniques can be implemented which will entice donors to contribute in the future without direct solicitation.

The Institution – From the perspective of an institution, information technology delivers information to attract and retain various customers, such as (1) students, alumni, faculty and staff can access and update information from any web-enabled device, anywhere in the world, (2) the evolution from point-to-point integration between applications to a single institution-wide database with integrated business rules and a workflow process library will blur the distinction between students, finance, alumni and human resource systems, (3) the needs of the customer base become the focus, rather than a focus on the rigid process structure of today's system, and (4) administrative systems are seamlessly integrated with instructional computing and commutations systems.

Most importantly is the ability of a truly robust set of institutional processes and tools to bring the entire institution together around its people. The work of higher education should be focused on the people it serves, not on its administrative systems.

IT AND ITS ROLE IN THE IMPLEMENTATION OF CRM PRACTICES

The role of information technology (IT) in CRM is of immense importance and the following functions are expected to be fulfilled through the use of IT:

CAPTURING OF DATA – System created for the use of IT should be able to capture right data form the identified sources. The challenge here is that of capturing data in diverse formats. The data that has to be captured should be authentic and error free. This means that data accuracy should be ensured as well as the incidences of errors creeping into the data during the capture process should be eliminated.

ASSIMILATION OF DATA INTO DATABASE – Data that has been captured need to be incorporated into a database and assimilated. Therefore, databases having proper design and structure needs to be created. They could be part of the CRM tool or custom-designed or bought off-the-shelf. Database should fulfill the following capabilities:

Robust: The database should be robust and enable transactions as and when desired by the users. It should be able to support the number of users transacting with the database and ensure that the waiting time not more than desired limit for a transaction. Also, the robustness should insure that there is no loss of data during the transaction.

Scalable: The database should be such that as the customer volume grows and number of users increases, it should be able to manage the increased load. This may require some additional IT applications and programmes but the database should be scalable. Therefore, before selecting the database, adequate consideration should be given to the issue of the future projections made by the company with regard to the customer base, number of users expected to use of IT systems, etc.

Secure: The database should be secure and data security should be ensured. For example, if identity numbers (ID) of customers are stored in the database, users querying in the database should not be able to get hold of such sensitive data since the database would become vulnerable.

DATA PROCESSING (GENERATING DESIRED OUTPUT) – The output expected form the system should be taken into account while planning it. After taking into account of the CRM strategy, a comprehensive list of desired outputs may be created. However, it should be noted that users may requires ad-hoc queries to be answered and provision should be kept for the same.

MAKING OUTPUTS AVAILABLE TO USERS – The users should be able to access the system whenever and wherever they desire. The system therefore should be able to generate outputs on a 24/7 basis as will as offer the outputs in formats recognizable by all users.

OBJECTIVE OF THE STUDY

Higher educational institutes are also like the other business organizations who want do develop better relationships with their customers. In the field of higher education students are their customers and receive educational services from them as described by the Consumer Protection Act. Information technology plays a vital role in developing and implementing customer relationship programme in higher educational institutes. Therefore, the basic objective of the study is to analyze the role of information technology in the implantation of customer relationship management in higher education.

RESEARCH METHODOLOGY

The research design of the study is exploratory cum descriptive. The research is exploratory due to the fact that the field of higher education has not been deeply touched by the earlier researcher. Therefore, in this case, extensive preliminary work needs to be done to gain familiarity with the phenomena in the situation to understand what is occurring, before developing a model and setting up a rigorous design for comprehensive investigation. The study is descriptive because the area of research that has been chosen by the researcher explains the attributes, which are associated with customer relationship management implication in the management education sector in India. The research is a two-tier study and seeks to explore the responses from director/administrator, who manages the various resources and activities within the institute and students, who avail education service form the management institutes. To fulfill the objective of the study two sets of questionnaires were prepared one for students and another one for directors/administrators. The questionnaires related to students (N=400) and director/administrators (N=40) were put forwarded to respondents of different higher educational institutes and observations are presented in the form of tables. The research has been carried out in the NCR region comprising the state of Haryana, UP, & Delhi as NCR has emerged as a prominent center higher education. Further, to solve the purpose of the study both descriptive as well as inferential statistical techniques were applied. In the descriptive, Means and Standard Deviation were calculated and to test the significance level of the difference between Means of the criterion variables Mann-Whitney Test and Karl Pearson's Coefficient of Correlation (r) were applied.

RESULT OF SUVEY

Today, information technology has become an integral part of higher education. Either it is the interaction between students and institutes, students and faculty, students and academic section, or faculty/staff and administrator, the importance of information technology cannot be ignored. Keeping these in view different variables by which the role of information technology or its importance can be understood are identified and presented before to respondents. The role of information technology has been discussed in relation to the students, faculty/staff /administrator, and institution as it benefits all of them in many ways. It is necessary to mention here that if faculty/staff and institutions are benefited through the use of information technology in the implementation of CRM practices, it directly affects the satisfaction level of the students and their relationships with institutions positively. This part of the survey is related to the various benefits which students get by the use of information technology in the implementation of customer relationship management strategies in higher educational institutes. The researcher has surveyed both of the respondents, directors/administrators (N=40) and students (N=400) and collected the responses.

PERCEPTION ABOUT GENERAL INFORMATION TECHNOLOGY BENEFITS TO STUDENTS

DIRECTOR/ADMINISTRATOR'S RESPONSE (N=40): Integration of information technology in the implementation of customer relationship management practices in management institutes offers many benefits. In the questionnaire, directors/administrators of different management institutes were asked to indicate their opinion about various advantages which students get by using information technology. Through the literature survey and discussion with experts in the field different benefits were identified and respondents were asked to indicate their opinions. The results of survey are presented in the Table 1.1.

TBALE 1.1: PERCEPTION OF DIRECTOR/ADMINISTRATOR ABOUT GENERAL INFORMATION TECHNOLOGY BENEFITS TO STUDENTS
(Number of Respondents = 40)

S. No.	Variables	Mean Scores	Standard Deviation
1	Higher level of access of information	3.82	1.244
2	Integral part of learning experience	3.74	1.223
3	Virtual access to faculty and students services	3.64	1.331

Source: Computed on the basis of Field Data

From the table it is evident, that through the use of information technology the students can have higher level of access of information about their options, performance, and future (Mean = 3.82, Std. Dev. = 1.244), technological resources are an integral part of their learning experience (Mean = 3.74, Std. Dev. = 1.223), virtual access to faculty and student services through websites and e-mail (Mean = 3.64, Std. Dev. = 1.331). As far as the standard deviation values are concerned there is divergence of opinion among the respondents as it appears from the survey results, integral part of learning experience (1.223), higher level of access of information (1.244), and virtual access to faculty and student services (1.331).

The respondents were asked to give their viewpoint about different given variable on a five point likert scale. Nearly 3/5th respondents are in agreement that information technology helps students in higher level of access of information about their options, performance, and future. With the help of the internet any

information is just one click away. Any student sitting any where in his/her home or in the campus can access information regarding various courses available, future potential of these courses, performance level of different institutes, etc. Among respondents 64% have mentioned that technological resources are an integral part of students' learning experience. From the study, researcher has found that in every learning step or process either it is classroom study or outside, students used to interact with technological resources on regular basis directly or indirectly such as, a teacher is delivering lecture through LCD projector or video conferencing in the classroom, a students is sending his queries to faculty through using mail, students doing there assignment work by using computer, or students searching different subjects related information on the internet. About 70% respondents are in agreement that information technology helps students in virtual access to faculty members and availing students related services through websites and e-mail. In management institutes it is becoming common that students are interacting with their faculty members through e-mail and in the same way faculty used to give assignments or asking to submit through mail only. Students also avail information regarding institute or details of faculty through institute's website. In this part the researcher has discussed the general IT benefit which students get in management institutes.

STUDENT'S RESPONSE (N=400): The responses of students were also collected on the same parameters and the results of the survey are presented the Table 1.2. From the table it is evident, that through the use of information technology the students can have higher level of access of information about their options, performance, and future (Mean = 3.69, Std. Dev. = 1.361), technological resources are an integral part of their learning experience (Mean = 3.52, Std. Dev. = 1.159), but in case of virtual access to faculty and student services through websites or e-mail (Mean = 2.53, Std. Dev. = 1.386) the response of students is not so encouraging. As far as the standard deviation values are concerned there is divergence of opinion among the respondents as it appears from the survey results, integral part of learning experience (1.159), higher level of access of information (1.361), and virtual access to faculty and student services (1.386).

TABLE 1.2: PERCEPTION OF STUDENTS ABOUT GENERAL INFORMATION TECHNOLOGY BENEFITS TO STUDENTS
(Number of Respondents = 400)

S. No.	Variables	Mean Scores	Standard Deviation
1	Higher level of access of information	3.69	1.361
2	Integral part of learning experience	3.52	1.159
3	Virtual access to faculty and students services	2.53	1.386

Source: Computed on the basis of Field Data

To ascertain level of difference among the responses of respondents (Director/Administrator and Students) Mann-Whitney Test was conducted. High value (Mann-Whitney Test Value closer to 1.000) indicates that there is not any significant difference between the opinions of both of the respondents (Students and Directors/Administrators) while less value indicates (Mann-Whitney Test Value closer to 0.000) that there is a significant difference between the opinions of respondents (Table 1.3).

TABLE 1.3: RELATIONSHIP AMONG THE RESPONSES OF RESPONDENTS ABOUT BENEFITS TO STUDENTS

S. No.	Variables	Mean Scores (N=400)	Mean Scores (N=40)	Significance level of Mann Whitney Test
1	Higher level of access of information	3.69	3.82	0.571**
2	Integral part of learning experience	3.52	3.74	0.386**
3	Virtual access to faculty and students services	2.53	3.64	0.117*

Note: *, ** indicate Mann-Whitney Test value is significant at 5% and 1% levels respectively.

Source: Computed on the basis of Field Data

The responses of both of the respondents are similar in case of higher level of access of information (0.571) and integral part of learning experience (0.386) and it is well justified by Mann-Whitney Test Value. While as indicated by Mean values and Mann-Whitney Test value it appears that there is a difference in the opinions of respondents in concerned with virtual access to faculty and students service (0.117).

PERCEPTION ABOUT INFORMATION TECHNOLGY BENEFITS TO FACULTY/ STAFF /ADMINISTRATOR

DIRECTOR/ADMINISTRATOR'S RESPONSE (N=40): Integration of information technology in the implementation of customer relationship management practices in higher education also offers many benefits to the faculty/staff and the people who are working at the administration level. The respondents were asked to assess their opinions about various advantages due to the use of information technology in the implementation of customer relationship management practices. Through literature survey and discussion with experts in the field different benefits were identified and respondents were asked to indicate their opinions. The results of the survey are presented in the Table 1.4.

The results of the survey indicated that faculty members make immediate student referrals to key support programs (Mean = 4.45, Std. Dev. = 0.985), faculty curriculum planner develop an accurate picture of which technological resources truly make a difference in students learning (Mean = 4.05, Std. Dev. = 0.845), self service system empowers administrators to rethink the investment of administrative resources (Mean = 4.02, Std. Dev. = 0.861), and responsibility shifts from administrators to students and faculty for information maintenance with self service system (Mean = 3.57, Std. Dev. = 1.412). From the survey result it is also very much evident that the standard values are consistent in case of curriculum planners for students learning (0.845), empowers administrators review administrative resources (0.861), and immediate student referrals to key support programs (0.985), which show a favorable response from the respondents where as in case of information maintenance with self service system (1.412), there is divergence of opinions among the respondents as it appears from the survey results.

TABLE 1.4: PERCEPTION OF DIRECTOR/ADMINISTRATOR ABOUT BENEFITS TO FACULTY/STAFF/ADMINISTRATOR
(Number of Respondents = 40)

S. No.	Variables	Mean Scores	Standard Deviation
1	Immediate student referrals to key programs	4.45	0.985
2	Curriculum planners for student learning	4.05	0.845
3	Empowers administrators review admin. resources	4.02	0.861
4	Information maintenance with self service system	3.57	1.412

Source: Computed on the basis of Field Data

Faculty, staff members and administrators are at the receiving end of various benefits due to the use of information technology and managing the relationship management activities more effectively. Among the respondents 4/5 are in agreement that faculty members make immediate student referrals to key support system. During the interaction with the respondent in more detail it was found that through the use of information technology responses of students can be taken easily in concerned with any activity to know about its acceptance among students or any proposed suggestion. In management institutes, it was found that faculty members prepare their lesson plan in advance mentioning how the syllabus will be covered during semester and the teaching aids used by faculty members. The same is conveyed to students also through mail or website so that they are well aware about course being taught to them during semester and through which teaching aids. From the results of survey, it is evident also that nearly 86% respondents are in agreement that faculty curriculum planner makes a difference in students learning. About 3/4 respondents are in agreement that use of information technology at administrative and academic level helps an administrator to minimize the investment. In the management institutes due to the use of information technology a lot of academic work is also done by faculty members themselves such as, filling the attendance of students, submitting sessional tests and internal assessment marks, etc. Therefore, such types of administrative work empower an administrator to rethink or minimize investment in employing administrative and academic manpower. About 3/5 respondents

are in agreement that due to the use of information technology responsibility shifts from administrators to faculty and as far as information maintenance is concerned. As in most of the cases faculty and staff members are responsible to update information on the website of institute or providing information to students through e-mail.

In the study, at attempt has been made to gain insight into the major information which the faculty/staff/administrator through the use of different approaches of information technology. To identify the relationship among the means values of key information received by the faculty/staff/administrator through the use of different approaches of information technology and the average of information received by faculty/staff/administrator coefficient of correlation has been calculated. High value of 'r' (Towards +1.0) indicates benefits with high significant level and less value of 'r' (Towards 0.0) indicates benefits with less significant level due to use of information technology in the implementation of customer relationship management strategies and results are presented in the Table 1.5.

TABLE 1.5: RELATIONSHIP BETWEEN THE KEY INFORMATION RECEIVED AND AVERAGE OF INFORMATION RECEIVED (Number of Respondents = 40)

S. No.	Variables	Mean Scores	Standard Deviation	r value
1	Immediate student referrals to key programs	4.45	0.985	0.857**
2	Curriculum planners for student learning	4.05	0.845	0.892**
3	Empowers administrators review admin. resources	4.02	0.861	0.918**
4	Information maintenance with self service system	3.57	1.412	0.827**

Notes: r-value indicates value of Karl Pearson's Coefficient of Correlation.

** indicates Correlation is significant at 1% level.

Source: Computed on the basis of Field Data

The results indicate that faculty members make immediate student referrals to key support programs (r = 0.857), faculty curriculum planner develop an accurate picture of which technological resources truly make a difference in students learning (r = 0.892), use of information technological tools also empowers administrators to rethink the investment of administrative resources (r = 0.918), and responsibility shifts from administrators to students and faculty for information maintenance with self service system (r = 0.827), have been identified as key information for faculty/staff/administrator and the same is support by the correlation results also as the values indicate significant and positive correlations.

SUMMARY

Concerns over to compete globally and maintain the quality of our higher education system are mounting. A robust higher education system is critical to the future economic competitiveness of students. In this environment, the focus on meeting minimum quality standards is no longer sufficient to develop better relationships with the students. It is necessary to put higher education on the journey to performance excellence in a highly competitive educational environment. In the paper, the researcher has made an effort to discuss the role of information technology in the implementation of customer relationship management practices successfully in higher education. The results of the survey also indicate the importance of information technology in establishing relationships through its different tools such as, website and e-mail has been acknowledged by respondents across different management institutes.

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If you have any queries please feel free to contact us on our E-mail **infoijrcm@gmail.com**.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator