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Customer Relationship Management system models application in higher education

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Abstract

The paper present a short description of Customer Relationship Management models that can be applied in the university environment. It focuses on evolution of the models and their approximation to real-life situations.

1. CRM in high school

High schools worldwide are undergoing fundamental shifts in how they operate and interact with their customers: students, faculty members and staff members. Fox and Kotler [1] state that "the best organization in the world will be ineffective if the focus on 'customers' is lost. First and foremost is the treatment of individual students, alumni, parents, friends, and each other (internal customers). Every contact counts!"

During the past years, many universities in Poland have begun reconstruction of their business processes. The reason was to cut the costs down and be much more efficient due to increasing competition of other schools or colleges. The possibilities offered by modern technology cause that high school management started to consider introducing information systems that will help with financial and accountant operations, inventory of equipment, deanery work support, etc. Nowadays, besides Enterprise Resource Planning class systems, we have to consider another type of important software and operation processes – Customer Relationship Management.

According to Steve Billingham from Ernst & Young, "CRM is a philosophy and a way of doing things, not a technology", first of all we should plan relation to the university client. Nevertheless, this article describes models of some CRM software parts and evolution in the Polish Virtual University.

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2. Studies enrolment – the first model

One of the major problems connected with distance learning is the enrolment process. Specific characteristics of online education disqualify the traditional model of student recruitment. The situation, where students post filled application forms seem to be inconvenient for the students and expensive from the university point of view. In the Polish Virtual University we have developed Internet-enabled software, that will support studies and open courses enrolment.

In the first enrolment model applicants filled registration forms available on the university website. Applicants had to fill all the required fields of the form. The applicant's data were saved in a database. Then a designated member of the university staff checked, categorized and further processed the data. On the basis of these data all the documents required in the enrollment process were generated. Then the documents were posted to the applicants. They signed the application forms and posted them back to the dean's office. The received documents were used to prepare applicants' lists, which were subsequently submitted to the enrolment committee.

Due to short deadlines the software we developed and implemented was very simple and had a limited number of functions. The processes of document and list generation were only partially realized by the software and required highly skilled computer personnel. Simple categorization of orders did not provide solutions to all possible problems that occur in real life situations (faked applications, wrong personal data). Even the transfer of the data to other information systems (e.g. e-learning platform) used in the Polish Virtual University could only be accomplished by a person who was familiar with the structure of our relational databases. This increased the total cost of the process.

Each request submitted via the website was treated individually. A person who wanted to enrol on two different courses or studies had to fill almost the same Internet registration form twice. The applicants could not trace the progress of enrolment process, either. The staff responsible for students enrolment had a lot of problems with the identification of the applicants. A person, who applied for more than one course was treated as a completely new applicant each time. To find out, if the applicant had already used the educational products offered by the university we had to check all applications (or orders) for all the courses or studies.

3. CRM – an enhanced model

Problems that occurred in the previous version of the enrolment system and the necessity of centralized user management made us reanalyze and rebuild business processes related to the PVU's client enrolment, management and service. We found out, that there is no software available that would fit and support recruitment and other business processes taking place in the Polish

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Virtual University. Prices of flexible software, allowing to adjust and adopt it to our requirements, substantially exceed the budget of our project. We decided to design and develop our own software using our internal resources.

There were several persons from various departments and various project teams participating in the modeling of PVU's business processes and in the development of the system. The goal was to identify all points and ways of contact between the client and the university in all the stages of service. Relying on the work of the project team a new user management system was developed.

The new model is based on a broadened definition of the term 'client', in the context of PVU's business processes.

3.1. The „client"

In the previous, simple model of recruitment, who we understood as a client was a potential student who applied to take up studies on a regular basis or to participate in open courses. Scrupulous analysis of the processes connected with learning and teaching, student service, multimedia and learning content production, allowed to identify two different groups of clients. The first group, called the external clients group, consists of students and applicants. The second group turned out to be very important from the business point of view. It includes people, who are not students – the university clients in the traditional sense.

People who belong to this group participate in the processes of educational materials production and teaching. They are:

- authors of educational content
- facilitators or instructors

In most cases, those people have not been employed for a long period of time. They are rather engaged to realize particular tasks or prepare essential educational materials. However, we can treat them as a kind of employees or cooperates. Therefore we classify those persons as the internal clients.

In the older model of recruitment, each applicant who wanted to begin studies or participate in the open courses filled Internet registration forms and his or her data were stored in a database. All the data were processed according to appropriate procedures, as described above. Each submission of the form created a new entity in the database. The database structure and the system treated those orders as if they were created by different individuals. In most cases, this solution worked well, but there were several situations when it caused problems. The system did not allow to check if a particular applicant was or is our student. Finding it out required a lot of time, which increased the costs of service. The external clients did not feel comfortable and working in the system was inconvenient. Students had to use different logins and passwords to enter the

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distance learning platform, depending on the course they enrolled. Logins were assigned to applications rather than users.

The next step was to introduce unequivocal identification of users. Now each of the internal and external clients have an unique ID – one for all PVU's systems. It is used for authorization of the clients in their personalized sections of the university website – the enrolment room, facilitator's room, student's room and the e-learning platform.

3.2. Orders model

The next step was to broaden the meaning of "order". In the previous version of the software, the user's application was equivalent to an application for a chosen open course or to study on a regular basis. The experiences we gained during a year of servicing the students and teachers led us to broaden the meaning of order, which we called an application so far.

In the new model of costumer service order means each request of a client that is sent to an appropriate member of the university staff. We divided what was earlier called enrolment applications into four different types of orders:

- studies enrollment,
- open course enrolment,
- study course enrolment,
- post-graduated studies enrolment

The necessity to divide the recruitment applications resulted from elaborated business processes limited by law and university internal procedures. The process of enrolment for studies is totally different from that for an open course. The applicants who want to become students must have a high school certificate. This requirement does not apply to the participants of open courses. Any person can enrol for an open course. There is also a different recruitment process in the case of enrolment on open courses.

The division of enrolment applications allowed for flexible introduction of two new kinds of educational products: post-graduated studies and study courses. Just as in the previously described cases, these products have different service procedures, recruitment procedures and law requirements. In the case of the post-graduated studies, participants have to be graduates of a college or a university. Subjects realized as study courses are included in the curriculum of regular studies. Participants of study courses are given some extra privileges, when they decide to continue studying on a regular basis. This feature distinguishes open courses from study courses.

The differences between particular types of learning products described above do not constitute a complete list of differences that made us divide enrolment applications into the described four groups.

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During one year of work on our information systems we found out another problem – the necessity of facilitators recruitment. A large number of applications and the necessity to treat and analyze each of them individually made us consider developing software that would support management of these applications. However, the information about facilitators and people applying for this job, has to be distributed to other information system of the university: e-learning platform and the dean's office system. Facilitators are also strongly related with the other kind of client, I have mentioned above – the student.

The process of learning quality verification includes, among others, a student questionnaire. Each of the students can evaluate the educational content and the facilitator who was responsible for the learning process in a particular workgroup. The facilitator's assessment includes, among others:

- competence,
- timely feedback,
- engagement,
- motivation to work,
- personalized approach to the student.

For the reasons described above, the facilitator is introduced as another important participant in the CRM system model. Similarly to students, he has his own, unique identifier that allows authorization in the personalized sections of the university website and the e-learning platform. People who want to work as facilitators, have to fill special registration forms available on the Internet. Submission of the form associates the application for the facilitator with the submitting individual.

The analysis of business processes connected with customer service, shows the necessity to introduce another type of order form - technical problem form. Some of the systems used in the Polish Virtual University require special additional software and system updates to be installed on the end user's terminal. The distance learning platform requires proper version of Java runtime environment to be installed. Multimedia materials and video files are compressed with the latest codecs to reduce their size. There are often problems with the user's authorization and students using the e-learning platform properly. For most of the students, configuration of the software is a problem. Therefore, there is a staff member who is responsible for providing help for the users experiencing technical problems.

The submission of a technical problem form is treated by the CRM system as a new kind of order. Using the CRM software, the staff member responsible for technical support has the possibility to trace changes in the process of problem solving and has a full view of a particular user's profile. It often happens, that to solve a problem the complete information about the user is required (e.g. what course he participates in, is he a facilitator or a student, is it the first problem that occurred on his computer or the problems taking place before). A common

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database of clients, both students and facilitators, substantially reduces the time required to solve a problem and cuts down the number of queries that have to be made to gather full information about a user and his computer.

3.3. Order status driven model

Each type of order is assigned to a proper business model of service. As mentioned above, various requirements are set for people applying for studies and applicants for open courses. There is also a totally different model of customer service in the case of a technical problem form being submitted.

Each of the orders can be set to a state specific to a particular business process (e.g. ‘New application’, ‘Accepted by the recruitment commission’, ‘Rejected by the commission’, ‘Moved to next edition’ – are the states for enrolment applications; ‘New order’, ‘Problem solved’, ‘Problem not solved’ – are the states for technical orders). We can assign independently the list of states for each type of orders. Each order can be set to one of the states available for a particular order type. These states (called also order statuses) are directly related to the stages of service described by internal procedures. Statuses allow for fast searching and advanced categorization of orders.

3.4. Order event and user event model

Classification of orders based on predefined states being assigned, does not cover all possible situations, which can occur during order service. Assigning several states to a particular order type only outlines a business model of service. It is not possible to solve all problems connected with customer support and service using status changes, even if this model is much more flexible than the one used in the previous version of the enrollment system.

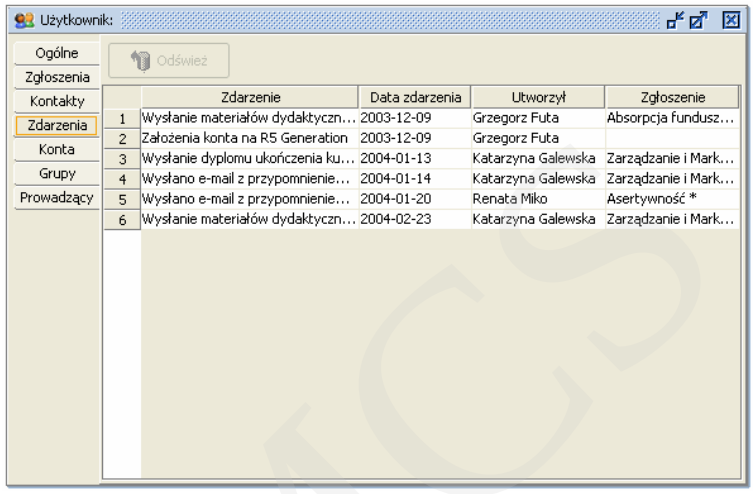
Some important events can occur during the costumer service. An important event from the facilitator’s service point of view is the information about internal training, in which a particular facilitator should participate, for example about a course on how to use the e-learning platform or specific teaching methods. Only those people who attended such training can work as facilitators.

Assigning events that occur in the order service process, allows for a status independent classification of orders and users. It is also possible to store not only the event, but also the event timestamp. This allows to trace the history of order and user service.

Events, in contrast to statuses, are assigned to persons. They can be optionally assigned to the orders. For example, if a staff member sets the event ‘Course materials were sent’ for a user and a particular order, it means that materials necessary to study on this particular course were sent to the user. Figure 1 shows the exemplary list of events assigned to the user (a) and the predefined events tree (b).

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a)



b)

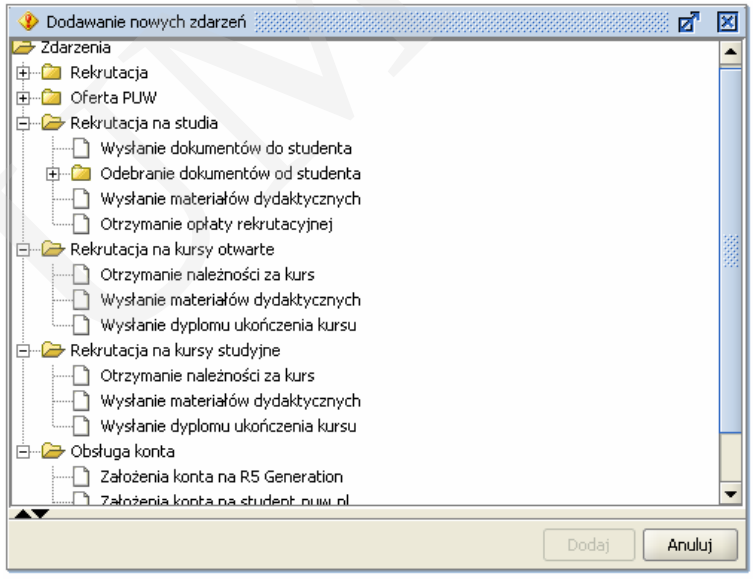


Fig. 1. Screenshots from the Polish version of software. a) list of events assigned to the user, b) predefined events tree

3.5. Basic CRM functions

Besides the CRM system models described above, software has many standard features of this class of software. These are among others:

– possibility of registration of contacts with users (phone calls, e-mails, meetings),
– possibility of searching users' that meet particular conditions,

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– full users management,
– educational products management,
– possibility of generation of reports and lists (e.g. list of users' group, envelope labels).

The software is written in Java [2] language as a standalone application. It uses Microsoft SQL Server 2000 database server.

4. Summary

The benefits of implementing a CRM business strategy are farreaching. Because CRM activities and technologies are fairly new to higher education, the best benchmarks come from the commercial sector. They include up to 42 percent increase in revenue, up to 35 percent decrease in cost of sales, up to 80 percent decrease in order errors, up to 25 percent reduction in the length of sales cycle, up to 20 percent increase in customer satisfaction ratings[1].

Designed upon the models described above, implemented and installed software emphatically increased efficiency of work. It increased revenue through improved recruitment and retention. The more functional software allows to reduce amount of administrative resources. The software allowed to improve customer service.

Faced with technological and economic changes, academic institutions are forced to look for enhancement of the value and effectiveness as far as current and potential customers are concerned. The concept of students, faculty members and staff members as "customers" will become a competitive imperative with a profound impact on how colleges and universities attract, retain, and serve customers of all types.

References

[1] Kotler P., Fox K., *Strategic Marketing for Educational Institutions*, Englewood Cliffs, (1995).
[2] Sun Microsystem official Java language website – http://java.sun.com/

[1] Statistics from a survey of 300 companies by Insight Technologies Group.