

CRM ADOPTION IN A HIGHER EDUCATION INSTITUTION

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ABSTRACT

More and more organisations, from private to public sectors, are pursuing higher levels of customer satisfaction, loyalty and retention. With this intent, higher education institutions (HEI) have adopted CRM – Customer Relationship Management. In order to analyse some of the interesting aspects of this phenomenon, we conducted an action research in a European Institute. The main research question we answered is “how to adopt a CRM strategy in a Higher Education Institution?” Some of the main findings of this study are (1) even though HEI’s main customer is the student, there are others stakeholders that a CRM project must consider; (2) universities can use their internal resources to implement a CRM project successfully; and (3) using Agile software methodology is an effective way to define clearer, more objective and more assertive technical requirements which result in a CRM software that meet user’s expectations and organizational strategic goals. These findings can help other HEIs

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planning to adopt CRM as a strategic tool to improve their relationship with the stakeholders' community and expand their student body.

Keywords: Customer Relationship Management; Higher Education; Selection and Implementation Software; Action Research, Student Relationship Management

1. INTRODUCTION

In order to achieve better results, higher Education Institutions (HEI) are adopting CRM (Customer Relationship Management) strategy (Hilbert, Schönbrunn, & Schmode, 2007; Zhou, 2012). 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, especially in executive education. To be more exact, as HEIs adopt CRM strategy, they are developing a "student-as-customer" perspective. An educational CRM 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.) (Grant & Anderson, 2002; Seeman & O'Hara, 2006).

Nowadays, a new concept of CRM education is emerging and still in development: Student Relationship Management (SRM). SRM is oriented specifically towards a Higher Education environment where strategy, processes and philosophical lines are oriented to academic goals and student needs (Zhou, 2012; Trocchia, Finney, & Finney, 2013). The core value of SRM is to develop organizational capabilities that enable educational institutions to construct a holistic understanding of their students, and, consequently, to increase student retention levels. In pursuit of these objectives, HEIs should develop strong CRM strategies well aligned with Information System (IS) solution (Daradoumis; Rodríguez-Ardura; Faulin; Juan; Xhafa & Martínez-López, 2010).

This case presents a relevant discussion regarding a CRM initiative in an HEI. We conducted an action research in a European University, focusing on the following research question: "How to adopt a CRM strategy in a Higher Education Institution?"

We organized this case in six sections. After this introduction, we discuss critical success factors in CRM adoption. Afterwards, we describe the research method used in the study. We then present the analysis of the data we collected during the implementation of CRM in the studied HEI. Finally, we present the discussion and final considerations of the paper.

People, process and technology vs. CRM critical success factors

Customer Relationship Management (CRM) strategy connects three fundamental dimensions of organizations, **strategy**, **philosophy** and **technology** (Pedron & Saccol, 2009). In addition, the success of CRM strategy depends on the right balance between three important organizational resources, **people**, **technology** and **processes** (Payne, 2005). 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 (Chen & Popovich, 2003).

On the question of people as a resource, as they adopt CRM strategy, organizations should get their employees committed to a customer-centered strategy.

Employees need to be trained as well as motivated to meet customer expectations and needs (Brito, 2011). Employees have a fundamental role in the relationship between organizations and their customers (Mendoza, Marius, Pérez, & Grimán, 2007), especially those who work in frontline positions such as customer services attendants, vendors and call centers (Garrido-Moreno, Padilla-Meléndez, & Águila-Obra, 2010). 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, Cheffi, and Dey (2010, p. 345) 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 (Richards & Jones, 2008). Processes are, then, the third fundamental resource of CRM strategy.

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 (e.g. return on sales and investments) (Xu, Yen, Lin, & Chou, 2002). However, there are Critical Success Factors (CSF) for CRM adoption that should be considered, as recommended in the literature (Rahimi & Berman, 2009). Table 1 presents CSF related to people, as they are fundamental to CRM success.

Critical Success Factors	Description	Authors
1. Top Management commitment	Top managers need to be strongly involved in the implementation of CRM solutions.	Xu et al. (2002); Chen and Popovich (2003); Sin, Tse, and Yim (2005); Mendoza et al. (2007); Rahimi and Berman (2009).
2. Communication of CRM strategy	It is important for organisations to share their values and goals with employees. CRM strategies need to be clearly communicated throughout the whole organization.	Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Brito (2011).

3. Customer services should take advantage of employees' personal characteristics	Organizations can add value to customer relationship by making the best use of customer service personnel.	Sin et al. (2005); Mendoza et al. (2007); Bull (2010); Lin, Chen, and Chiu (2010); Shang and Lin (2010); Garrido et al. (2010).
4. Customer-centric organisational culture	CRM strategy enables organizations to share a top-down customer-centered view.	Adebanjo (2003); Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Lin et al. (2010); Rahimi and Berman (2009); Chang, Park, and Chaiky (2010); Shang and Lin (2010); Rapp, Trainor, and Agnihotri (2010); Beldi et al. (2010).
5. End-users need to be considered throughout the whole process of CRM implementation	Users' requirements and expectations must be considered from the beginning of a CRM project.	Chen and Popovich (2003); Mendoza et al. (2007); Rahimi and Berman (2009); Chang et al. (2010); Shang and Lin (2010); Sindakis, Depeige, and Anoyrkati (2015).
6. Managing stakeholders' expectations is a key factor for CRM system acceptance	Managing the expectations of all stakeholders of a CRM project increases their motivation and minimizes their resistance to CRM software.	Xu et al. (2002); Light (2003); Mendoza et al. (2007); Rahimi and Berman (2009); Shang and Lin (2010).
7. Integrating all departments involved in CRM	A multi-department and multidiscipline project team enhances communication and information sharing between organizational departments.	Chen and Popovich (2003); Mendoza et al. (2007); Pedron & Saccol (2009); Rahimi and Berman (2009); Shang and Lin (2010).
8. Entire organisation needs to work towards a common goal	A CRM project is an important step to define a set of goals centred on customer relationship.	Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010).
9. Training people	Training employees to use the CRM software is important to ensure good results as well as to reduce resistance to change.	Chen and Popovich (2003); Mendoza et al. (2007); Garrido et al. (2010).

Table 1. CRM CSF related to people as a resource

Table 2 presents a set of CSF related to process. As the authors have stated, people are the key factor for CRM success, but without organizational processes, people will not be able to coordinate their CRM and organisational needs.

Critical Success Factors	Description	Authors
1. Building a holistic customer-oriented approach	Organizations should build an approach that integrates strategic areas such as sales, customer service, marketing, customer support.	Plakoyiannaki and Tzokas (2002); Light (2003); Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010).
2. Identifying corporate needs and translating general goals into CRM requirements	Business objectives and goals must be clearly identified and properly translated into CRM requirements in order to choose the right CRM software.	Light (2003); Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Payne (2005); Bull (2010); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010); Pedron, Picoto, Dhillon, and Caldeira (2016).
3. Automating decision-making and re-engineering processes when necessary	It is important to define or redefine business processes and include rules for process automation and decision-making.	Khodakarami and Chan (2014); Chen and Popovich (2003); Light (2003); Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Shang and Lin (2010); Rapp et al. (2010); Lin et al. (2010).
4. Defining clear and measurable business objectives for each phase of the CRM software implementation	It is important to define specific objectives as measures to be achieved at the end of each phase of the CRM software implementation.	Adebanjo (2003); Light (2003); Mendoza et al. (2007); Rahimi and Berman (2009).
5. Learning from campaign failures/successes and analysing customer database	An analysis of previous campaigns and customer databases will help to improve processes and customer data	Sin et al. (2005); Chang et al. (2010); Beldi et al. (2010).
6. Technical competencies are multifunctional	It is important to involve IT in CRM processes.	Adebanjo (2003); Chen and Popovich (2003); Mendoza et al. (2007); Chang et al. (2010); Rapp et al. (2010).
7. Develop one-to-one marketing strategy	One-to-one marketing allows organizations to develop customized solutions for customers in order to gain their loyalty and satisfaction.	Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Chang et al. (2010); Brito (2011).
8. Integrating innovation capabilities	Thinking innovatively helps to develop an efficient CRM strategy.	Chen and Popovich (2003); Mendoza et al. (2007); Lin et al. (2010); Chang et al. (2010).

Table 2. CRM CSF related to process

Finally, we present table 3 which describes CSF for CRM adoption related to technology.

Critical Success Factors	Description	Authors
1. Implementing a central customer information database	By using a central customer database, all members of the organisation access useful details regarding customers.	Adebanjo (2003); Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Ngai, Xui, and Chau (2009); Bull (2010); Chang et al. (2010); Rapp et al. (2010); (Zhou, 2012).
2. Programming automated scripts in computer languages, based on known solutions	The efficiency and quality of call centre and helpdesk supports can be improved by using predefined computer language procedures.	Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Chang et al. (2010).
3. Developing a central data warehouse including analytical tools	Through information technology specific knowledge about customer needs can be created. Old and new data can be analysed in order to discover customer characteristics, expectations and preference tendencies.	Light (2003); Chen and Popovich (2003); Adebanjo (2003); Mendoza et al. (2007); Rahimi and Berman (2009); Ngai et al. (2009); Chang et al. (2010); Rapp et al. (2010).
4. Configurable and easy-to-use CRM software	CRM software must be configurable according to business requirements and be user-friendly.	Adebanjo (2003); Light (2003); Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007); Rahimi and Berman (2009); Chang et al. (2010); Beldi et al. (2010).

Table 3. CRM CSF related to technology

2. METHODOLOGY

We developed this case with a qualitative approach, using the action research method. Action research is a method by which researchers and participants work together to find answers for specific and real problems in organizations (Altrichter, Kemmis, McTaggart, & Zuber-Skerrit, 2002; Descombe, 2010). Unlike other approaches in which research and knowledge application take place at two different stages, in action research these stages occur concomitantly (Descombe, 2010).

Action research presents four important characteristics. Firstly, action research is practical in nature, since it deals with real issues or problems occurring in organizations. Secondly, action research aims to propose changes to address those issues and problems. Thirdly, action research demands the active participation of members of organization in order to be successful (Descombe, 2010). The synergic effort of practitioners and researchers increases the effectiveness of the endeavour and helps to develop guidelines for future use (Descombe, 2010). Fourthly, action research involves a “feedback loop” (Descombe, 2010, p. 126) in which proposed solutions are applied and validated in real situations.

As proposed by Baskerville (1999) and Baskerville and Myers (2004), we developed a cyclical and organic two-cycle research process that contains five systematic phases. It is important to mention that each of the five phases of the cycle contains a feedback loop so that the results can be applied and validated. Figure 1 illustrates the research process adopted in this case.

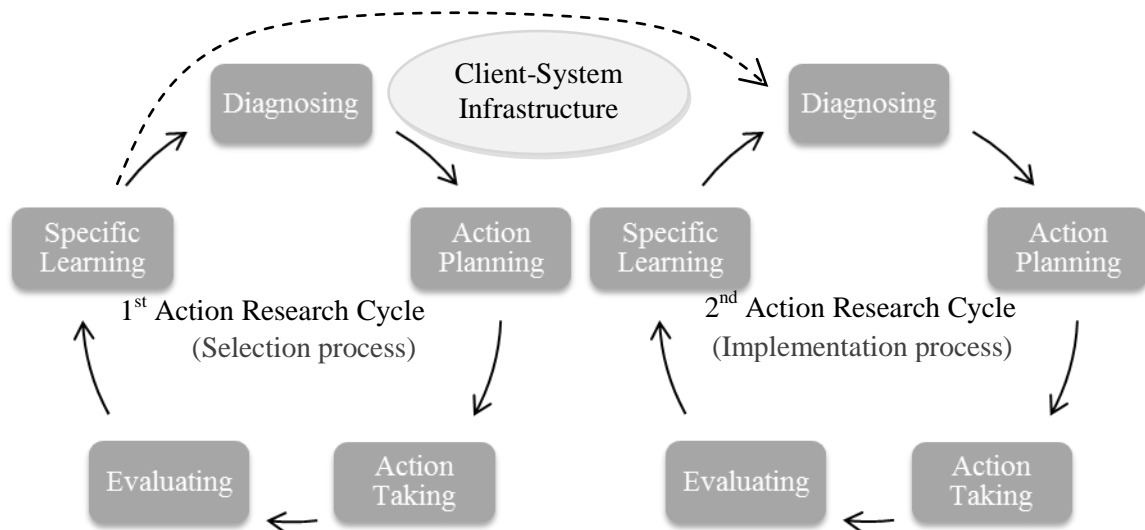


Figure 1. Action Research cycles

Source: Adapted from Baskerville, 1999, p.14

Besides collecting data during the two-cycles, we also analyzed other sources of evidence such as documents, direct observation, interviews with key members and notes taken by the researchers. By collecting data from diverse sources, we intended to increase the reliability and validity of the research results as well as analyzing the object of study from different points of view, as recommended by Yin (2009) and Eisenhardt & Graebner (2007).

We conducted this action research in an HEI called Sigma (this is a fictitious name). The first cycle of the action research focused on the selection of CRM software. During this cycle, the research team was composed of one school director, one member of the school's marketing department and two researchers. In order to conduct the selection of CRM software we did several studies (1) to collect information about similar cases; (2) to understand what alternatives were viable according to school needs and goals; (3) to set a number of guidelines for future steps and (4) to define best practices for CRM adoption in HEIs.

In the sequence, the second action research cycle aimed to implement CRM software. During this second cycle, the research team was slightly changed in order to meet the specific demands of CRM implementation. Then, the research team was composed of the five members involved in the previous cycle plus two programmers, one project manager and another system analyst. In this cycle, we focused on (1) defining the best methodology to implement the CRM solution; (2) analysing the work process of all departments involved in the project and (3) adapting HEI work processes to CRM strategy.

Action Research - The Sigma Institute CRM project

Sigma Institute is a European school of business and economics with approximately 4800 students (undergraduate and graduate students), 200 academic staff and 50 employees. Sigma Institute has built a good reputation in Portugal with very positive financial results, a renowned academic staff and former students in successful careers.

The concept of this CRM project was not only focused on the retention and satisfaction of students (Trocchia et al., 2013), but also on the improvement of the institution's relationship with client enterprises (for consultancy and executive education) and partner Universities (e.g. research projects) (Daradoumis et al., 2010). Besides that, Sigma intended to develop programs to attract talented students.

First Action Research cycle: Selection of a CRM software

As organizations go through the process of selecting a CRM solution that best suits their needs, they need to design clear and objective requirements (Payne, 2005). Selecting the right CRM solution also involves following specific recommendations (Ahituv, Neumann, & Zviran, 2002). To meet these needs, the first action research cycle took approximately nine months to be concluded.

Through the analysis of four different software selection methodologies (Chau, 1995; Ahituv et al., 2002; Colombo and Francalanci, 2004; Jadhav and Sonar, 2009), a software selection approach was defined and used for this project. The phases are described in the following sections.

As mentioned above, the research design was divided into two cycles and each cycle contained five phases: diagnosing, action planning, action taking, evaluating and specific learning. The first cycle, CRM selection, was structured in 10 steps.

Diagnosing

In the first cycle, diagnosing, was structured into four steps. Table 4 describes the four steps of the diagnosing phase.

<i>Step</i>	<i>Step Description</i>
<i>1. Defining project objectives</i>	The main issue was how to create a strong relationship with stakeholders (students, organizations and other higher education institutions) in order to reach high levels of satisfaction and loyalty. After debriefing, we realized that adopting a CRM strategy would help the organization to centralize the institution as well as increasing staff productivity.
<i>2. Analysing IS solutions available in the market</i>	In this phase, we defined the guidelines of what has to be done to select the right solution that would better fit organizational needs. We analysed the alternatives available in the market and also analysed software solutions adopted by other HEIs.
<i>3. Analysing business needs and services issues</i>	We interviewed employees of 11 different customer services: undergraduate students' office, executive students' office, Erasmus office, library, alumni association, marketing department, career development office, international relations office, counselling office and student ombudsman. We used this data to identify CRM software requirements and to create the technical document of Request for Proposal (RFP).
<i>4. Defining and selecting potential vendors and IS consultants</i>	During market analysis step we selected five different suppliers that offered the best CRM software, according to the institution's needs. The selection was based on aspects such as technical characteristics of software solution (i.e.: user-friendliness); software-house's credibility and cost.

Table 4. Description of the four steps of diagnosing phase

Action Planning

The goal of action planning phase was to get institutions members and researchers to write the action plan for the implementation of a CRM solution. In this phase, we also defined future goals and the strategies to achieve them.

<i>Step</i>	<i>Step Description</i>
5. <i>Writing RFP document and sending it to selected group of software suppliers</i>	The RFP described the CRM solution to meet Sigma's business needs. The document was divided into three sections. The first section described the institution's view of the CRM solution. The second section described the 38 business requirements for the CRM solution. The third section presented the 60 functional requirements (60).
6. <i>Preliminary analysis of CRM software solutions</i>	Potential CRM software suppliers were invited to present their solutions before the project team and institution board.

Table 4. Description of the two steps of the action planning phase

Action Taking

The objective of action taking phase was to implement the previously designed action plan. At this phase, researchers and institution members worked together to ensure the successful implementation of the CRM solution.

<i>Step</i>	<i>Step Description</i>
7. <i>Analysing supplier proposals</i>	After receiving the proposal from the five potential suppliers, we started the technical analysis of each proposed software solution. We evaluated the following aspects: fulfilment of business requirements; supplier's method of software implementation and suitability of supplier's software solution according to the institution's information technology architecture and other technical requirements.
8. <i>Evaluating the overall perspective of the supplier proposals</i>	After analysing the proposal of each supplier, the project team used a method to create an assessment map, which was divided into five groups: requirement fulfilment (technical and business needs); methodology for software implementation; software-house competences and previous experience; project schedule and assessment of supplier's situation (financial situation, local representation, contractual conditions, software-house reputation, etc.).
9. <i>Selecting 2/3 of the most interesting proposals and starting negotiations</i>	In this step, each software house was invited to present its proposal individually. The school board analysed the pros and cons and other relevant details.
10. <i>Choosing the software supplier that best met institution's goals</i>	The board selected the CRM software after analysing the software houses' credibility, their in-house expertise and the level of integration of each software solution with the institution's information technology architecture.

Table 5. Description of the steps of the action taking phase

Evaluating

In the evaluating phase, we assessed the results of the selection process (comprised in the 10 steps of the three previous phases). As we analysed the collected data, we identified the CSF for CRM adoption that stood out in Sigma's case. **Top Management commitment** was fundamental during the selection process. As the institution's board was fully involved in the process, we noticed that the project evolved more smoothly. Another CSF was the **communication of CRM strategy**. Through communicating CRM strategy effectively, it was possible to ensure a clear vision of the CRM needs in addition to defining more accurate requirements for software selection. The CSF for **end-user involvement** was high from the beginning of the project. Throughout the whole action research, end-user involvement was very important as it allowed researchers and institution members to have a close relationship with end-users and to understand their expectations regarding CRM solution. **Identifying corporate needs** and breaking general objectives into specific targets allowed the project team to define technical requisites for the CRM software more effectively. Finally, selecting a **configurable and easy-to-use CRM software** was fundamental for the CRM solution to adapt to the specific needs of each HEI department.

Specific Learning

The most relevant lesson learned in the learning phase is that we focused on the institution's CRM philosophy from the beginning of the selection process. In fact, the interviews we conducted with staff members helped us to develop a CRM philosophy more suitable to the institution's needs and culture. As we interviewed these staff members, they would become more motivated, enthusiastic and committed to the project. This one-to-one communication allowed us to minimize user resistance and understand their individual perspectives.

It is also important to mention that in Sigma's case, CRM philosophy was incorporated into every daily activity through a bottom-up process. However, some end-user suggestions could not be incorporated into CRM software. Managing user expectations was one of the major concerns of the project team.

Second action research cycle: CRM Implementation

We chose the Agile methodology and the Scrum method (Sutherland, 2005) to implement CRM software at Sigma. The Agile methodology aims to conclude implementation processes through short and fast periods (sprints) so that the project is delivered to clients in small parts or modules (Beck, 1999). These sprints are not linear, which make software development more flexible and dynamic. In fact, in the Agile methodology, the final product (software) is developed through a trial and error process and the requirements are continuously adjusted according to user requirements (Schwaber, 1997). In turn, the Scrum method of software development inherits basic concepts of the Agile methodology. In the Scrum method, the software development phases (analysis, design and development) cannot be predefined. Each sprint is unpredictable. To manage this instability, a control mechanism is established to monitor the overall process of software development (Schwaber, 1997). The project team used a very interesting Scrum method technique, user stories and epics. Epics are long and detailed reports based on user reports on their needs and their functional requirements for an IS solution to be designed (Cohn, 2004).

The second cycle of action research focused on the implementation of CRM software. Just like the first cycle of action research, this second was structured in five phases: diagnosing, action planning, action taking, evaluating and specific learning. It is also important to mention that it represents the first sprint of software development. In this sprint, the project team delivered the first module of CRM software to Sigma: customised training programmes. This module is part of CRM designed for enterprise relationships. The implementation process was concluded in three months approximately.

Diagnosing and Action Planning

When we started designing the project, we conducted several meetings with the institution board to define the requirements of the CRM project. In these meetings, board members would write epics (user stories) describing their expectations regarding the CRM solution for Sigma. These epics were a significant asset for this project. The content of these epics helped the project team to define business and functional requirements as well as CRM processes. These meetings also helped to define the action plan for the implementation of the CRM solution at Sigma. In these meetings we: established into how many epics the CRM solution would be divided, prioritized the epics according to the board's strategy, defined the methodological process to follow and defined the project team. Table 7 describes the list of the main epics of the CRM solution.

Epic	Objective
Enterprise relationships	Development of strategies and processes to improve the institution's relationship with its partners.
Marketing campaigns	Development of marketing tools to automate marketing campaign processes.
High school relationships	Development of strategies and processes to improve the relationship between high schools and universities in order to attract future students.
Student/Alumni relationships	Development of strategies and processes to enhance the levels of loyalty and satisfaction of current and former students.
Internal and external events	Creation of processes specific for event management (e.g.: conferences).
University relationships	Development of strategies and processes to increase the relationship between the Sigma and other Universities.
Internal and external communication	Development of marketing tools for better communication with stakeholders (e.g. e-mail, telephone).
Leads	Development of strategies and processes to store any contact that can be a potential business opportunity.
Social networks	Through IS tools, Sigma will take advantage of its social networks by collecting information on current and potential students.
Crowd-sourcing	Development of strategies and processes to motivate stakeholders to share ideas and suggestions for future improvement.
Research centers relationship	Development of strategies and processes to increase the relationship between the institution and its research centers.

Action Taking

In this phase of the last cycle of action research, we collected information about the processes in all departments at Sigma. We collected this information by interviewing staff members. The objective of these interviews was to define new processes for CRM strategy to be implemented at Sigma. Once the new processes were defined, we created the epics. These epics described user requirements for CRM software. These epics also helped to design guidelines for programmers.

When the first version of the CRM module was done, we presented the solution to the marketing department of Sigma. We also conducted a training session for the members of this department so they could use the new CRM software. Apart from that, we offered a user manual and further training sessions in the following weeks.

Evaluating

During the first sprint of CRM implementation, we faced some difficulties. Due to the project team's lack of experience the sprint took four weeks to be concluded. However, the intensive training program helped us to overcome these obstacles as well as integrating user needs into the CRM solution. It should be mentioned, though, that training should have happened **before** implementing the CRM software, not simultaneously.

In this evaluation phase, we pointed out the critical success factors of the CRM implementation process at Sigma. Firstly, **top management commitment** was fundamental. Since the school board was highly involved in the project, decisions were taken more quickly and all involved in it put in a lot of effort to meet the project schedule. **Communicating CRM strategy** clearly to all involved in it allowed us to define clear and viable CRM requirements. **Managing user expectations** was a key factor for user acceptance. **Defining clear and measurable business objectives for each phase of the implementation** was another critical factor to ensure that project results would meet user and institution expectations. Finally, **configurable and easy-to-use CRM software** prevented user resistance and motivated all actors involved.

Specific Learning

At the beginning of the project, we noticed some resistance within some project stakeholders. For some of them, the IT area was responsible for many of their daily problems. However, through good, clear communication, the project team managed to create a healthy work environment and a sense of commitment. The project team faced other problems such as bureaucracy, issues related to organizational culture and organization policies. Again, training was crucial to overcome these obstacles.

3. DISCUSSION

High Education Institutions are complex organizations, with many different stakeholders: students, academic staff, non-academic staff, government, regulatory bodies, customer enterprises (for executive courses and consultancy or research projects), other Universities (research partners), etc. Each stakeholder has a different assumption as to what a CRM solution is. Therefore, implementing a CRM software requires a thorough analysis of major business requirements (Sindakis et al., 2015).

To succeed in this challenging project, Sigma recruited a multidisciplinary team consisting of people from different departments (IS, marketing, students office and academic staff). That confirms the importance of integrating all different departments as a critical success factor (Shang & Lin, 2010).

The Agile methodology and the Scrum method proved to be very effective for CRM software development. Adopting Scrum provided a dynamic environment for designing requirements and conducting real-time tests (Schwaber, 1997). The use of sprints allowed a slow but continuous change in organizational processes that impacted on CRM strategy.

A customer-centred culture was built as CRM software was implemented. Fortunately, the board's perspective was that building a CRM philosophy would take time. Unlike most information systems projects, this project was deliberately conducted slowly in order to integrate business requirements, user expectations and technology. In fact, literature shows that positive CRM results depend on continuous adjustments in organizational processes, culture and strategy (Payne, 2005).

Having in-house expertise (professors specialized in CRM, marketing, strategic information systems) helped the institution to manage effectively three major organizational resources, people, process and technology, as recommended by Chen and Popovich (2003).

We observed that Sigma lacked technological tools to support the relationship with its students/customers. In this CRM project, we emphasized software adoption, but CRM strategy and philosophy were always clear for the project team.

In regard to people, the main CSFs were managing user expectations and training people, as mentioned by Garrido et al. (2010). Many departments received a personalized training module to meet their specific demands. While the final users were progressively incorporating the CRM software into their routines, a member of the project team was designated to monitor their evolution. We tested the CRM software in the department of executive education since the numbers of students in this course is low. Another significant aspect was that the project team had previous experience with CRM software which facilitated their adaptation to Sigma's context.

Another CSF related to people must be mentioned. Customer-centric organisational culture is critical for CRM success (Beldi et al., 2010). In Sigma's case, it is common that many employees from services departments enrol in for post-graduation or master program. As these programs offer CRM disciplines, staff members developed an understanding of how and why organizations improve a relationship with customers. That perspective helped staff members to accept the cultural change better.

According to Seeman and O'Hara (2006), all HEIs have a diversity of stakeholders. However, the most important of these are definitely students. In Sigma's CRM project, the creation of the "high school relationship" epic was important because the school can strategically attract potential students. This is a CSF related to a "process", defined as "develop one-to-one marketing" (Chang et al., 2010).

4. FINAL REMARKS

Higher Education Institutions are constantly in transformation, trying to follow and adapt to the trends of market orientation and behaviour. As a result, their

management style is evolving through the adoption of new management practices, such as Customer Relationship Management strategy (Daradoumis et al., 2010).

There are several questions related to CRM adoption in a HEI to be highlighted, such as how to develop and build CRM values in an HEI environment?, how can organizational culture be effectively changed?, how can organizations stimulate staff commitment?

In this case, we focused on answering the question: how to adopt a CRM strategy in a Higher Education Institution? To achieve this goal, we studied critical success factors for CRM adoption and conducted an action research.

After discussing in detail many important aspects, we can summarise what HEIs must consider:

- As they engage in the CRM software selection process, HEIs should pay attention to software integration and to supplier's know-how on that specific software.
- The main customer for an HEI is the student, but there are others stakeholders that a CRM project should consider, such as enterprises and partners, since CRM projects can develop a holistic view of customers and create strategies to be closer to them (Trocchia et al., 2013).
- A university can use its internal resources, like CRM, marketing and information systems professors, master's degree students, and staff from marketing and information systems departments to develop a CRM project. These people have CRM knowledge and are fit for this endeavour.
- Using the Agile software methodology to implement CRM can be very effective. The Agile methodology allows for the defining of requirements with flexibility and faster delivery of the final product. The Agile methodology and the Scrum method can be useful in implementing CRM software in HEI's.

In conclusion, we state that one limitation of this case is that our action research did not cover the actual use of the adopted CRM (as mentioned above, the action research covered selection and implementation processes). Such an analysis would allow us to have a broader perspective of the impact of CRM on the institution's organizational processes and on their relationship with its student body. For that reason, for future studies, we suggest a longitudinal research to analyse the impact of CRM on Sigma's performance and how CRM added (or did not) value to the institution's Student Relationship Management (SRM).

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