The selection of CRM software for a Higher Education Organisation: 
the case of a Portuguese University

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Abstract
In our days, more and more organisations from private to public sectors are looking to reach high customer values of satisfaction, loyalty and retention. To achieve such objectives, they have to increase and develop strong Customer Relationship Management (CRM) strategies and philosophies where Information System (IS) solution can suit on. Nowadays, the majority of IS of CRM solutions can easily fit in these strategic lines, if they follow the Critical Success Factors related to people and process. This paper discusses a CRM software selection in a Higher Education Organisation, where at the same time it looks to describe the importance of each organisational internal resource such as people, process and technology. To develop this study, we adopt the Action Research method. Through this research, we had the opportunity to develop an action research which is an important academic contribution for the school, due the fact that is a complex research method where researchers and participants must work together and be integrated in the research environment. On another hand, any University or different type of organisation can learn with this experience to use a methodology to select a suitable CRM solution.

Keywords: Customer Relationship Management, Higher Education, Selection Software, Action Research.

1. Introduction
Nowadays, organisations have a huge necessity to strategically evolve using technologies in order to enhance their reputation as to increase customer loyalty and retention. To reach these objectives, it is critical for an enterprise to collect the best internal resources (people, technology and process) to effectively develop a CRM – Customer Relationship Management strategy.

CRM is focused on customer business strategies to specifically increase their satisfaction and loyalty through the offer of more attentive, specialized and customized services to each single customer [Croteau and Li 2003].

Nowadays, due to the constant global evolution, Higher Education Organisations are constantly in transformation to try to follow and adapt themselves to the tendencies of market orientations
and behaviour. As a result, their management style is evolving through the adoption of new management practices [Santiago et al. 2006].

According to Seeman and O’Hara (2006), all Higher Education Organisation’s have an important diversity of stakeholders but the most important of them are the students. To have a closer relationship with them as to increase their satisfaction, it is crucial to be focused on their needs. Higher Education Organisation’s look to develop a “student-as-customer” perspective where through an educational CRM system they pretend to have the capabilities to develop a 360º vision of the student life’s and needs. Besides that, they look to have a stronger interaction with the most important student touch points, for example: admission, registration, financial and aid [Seeman and O’Hara 2006] and [Grant and Anderson 2002].

This paper discusses strategic lines to enable an University to build a suitable CRM strategy. Through an action research conducted in a Portuguese University, we intend to answer: How the selection of CRM software for a Higher Education organisation could be influenced by people, technology and processes?

In addition, this paper represents the part of a more deeply research which looks to study the adoption of the CRM solution. This study will cover the selection and implementation process for a CRM adoption.

We organize the paper in five sections: after this introduction we explain how important a CRM strategy is for an organisation, establishing a relation between critical success factors of a CRM and “people, processes and technology”. The theoretical referential also present a methodology to select a CRM software. Then, we describe the adopted method in this research. After, the action research conducted at Sigma University is described. Finally we discuss which factors could interfere with the different levels of the CRM software selection.

2. Literature Review

2.1 People, process and technology vs. CRM critical success factors

Customer Relationship Management is a strategy which connects three important vectors (Technology, Philosophy and Strategy) and combines three important organisational resources (People, Technology and Processes) to reach high levels of customer satisfaction, retention and loyalty [Edwards 2008] and [Chen and Popovich 2003].

Through their historical customer’ needs, the CRM is increasingly viewed as a critical success factor for an organisation. This vision offers to an enterprise the expansion of its capacity in
answering to the future needs of their customers as to improve its interaction (satisfaction, retention and loyalty) and experiences with them [Xu et al. 2002].

According to Rahimi and Berman (2009), processes are ways which permit the customers to relate with organisation through its different functions as sales forces, client services, marketing and support services. That relation between customers and organisational functions only exists thanks to the employees. These actors have a specific role in a specific department and this relation only exists when they integrate the CRM philosophy [Mendoza et al. 2007]. But, to integrate successfully a CRM strategy in the whole organisation, as mentioned by the authors, it is important to consider technology as an important part of the CRM strategy because Information Technology looks to create and implement specific tools regarding the processes necessities.

It is essential for a CRM strategy to incorporate characteristics, elements and variables which can significantly increase the impact of the performance and efficiency of each internal resource. All these properties are known as CSF - Critical Success Factors [Rahimi and Berman 2009]. The following tables present which CSF are related with the different internal resources. According to that, in Table 1, it can be considered that the main idea of the CRM CSF related to people is to define a central organisational culture focused on the customer relationship where the messages are shared equally between each stakeholder.

<table>
<thead>
<tr>
<th>Critical Success Factors</th>
<th>Description</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Top Management commitment.</td>
<td>Top Managers from the organization need to be strongly integrated in all the adoption of the CRM solution.</td>
<td>Xu et al. (2002); Mendoza et al. (2007); Sin et al. (2005); Croteau et al. (2003); Shum et al. (2008); Rahimi and Berman (2009); Chen and Popovich (2003)</td>
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<tr>
<td>2. Communication of CRM strategy</td>
<td>To share the common values and goals it is important for the organisation and the project success that the CRM strategies are clearly communicated in all the departments.</td>
<td>Xu et al. (2002); Mendoza et al. (2007); Sin et al. (2005); Rahimi and Berman (2009); Chen and Popovich (2003)</td>
</tr>
<tr>
<td>3. Customer services have to take advantage of the personal characteristics of their employees.</td>
<td>The value of the relationship between customers and customer services can be increased through taking advantage of their personal characteristics.</td>
<td>Xu et al. (2002); Sin et al. (2005); Bull (2010); Lin et al. (2010); Shum et al. (2008); Shang and Lin (2010); Mendoza et al. (2007).</td>
</tr>
<tr>
<td>4. Customer-centric organisational culture.</td>
<td>Through CRM, from operational positions to executive positions, all of them integrate and share the same customer view and</td>
<td>Xu et al. (2002); Adebanjo (2003); Sin et al. (2005); Lin et al. (2010); Shum et al. (2008); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010); Rahimi and Berman</td>
</tr>
</tbody>
</table>
5. The end-users need to be involved since the beginning in a CRM adoption. The final users must be involved since the beginning of the CRM construction to integrate all its values and principles.

Xu et al. (2002); Shum et al. (2008); Chang et al. (2010); Shang and Lin (2010); Rahimi and Berman (2009); Chen and Popovich (2003); Mendoza et al. (2007).

6. Managing expectations is a key factor for acceptance. Managing the expectations of employees related to the CRM allows the growth of their motivation, attachment and commitment.

Xu et al. (2002); Light (2003); Shum et al. (2008); Shang and Lin (2010); Rahimi and Berman (2009); Mendoza et al. (2007).

7. Integrate all different departments through a CRM project team. Through a project team the union between all different departments will be created. This commitment will help to support all their CRM needs.

Xu et al. (2002); Shum et al. (2008); Shang and Lin (2010); Rahimi and Berman (2009); Chen and Popovich (2003); Mendoza et al. (2007).

8. The whole organisation has to work towards common goals. Defending the same aims and working toward to the same objectives allow the CRM project to create strong customer relationships.

Sin et al. (2005); Shum et al. (2008); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010); Chen and Popovich (2003); Mendoza et al. (2007).

9. Training people is a critical factor. Training employees to use the CRM is an important step for acceptance and motivation as for helping the transformation process.

Shum et al. (2008); Mendoza et al. (2007); Chen and Popovich (2003); Xu et al. (2002).

Table 1 – CRM CSF related to people

Through Table 2, we could understand that processes played an important role in a CRM strategy. As the authors referred, people are the key factor for CRM success, but without processes, people won’t be able to coordinate their CRM and organisational needs.

<table>
<thead>
<tr>
<th>Critical Success Factors</th>
<th>Description</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Build an all-embracing approach.</td>
<td>This approach offers the possibility to integrate sales, customer service, marketing, field supports and other functions.</td>
<td>Xu et al. (2002); Light (2003); Sin et al. (2005); Shum et al. (2008); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010); Rahimi and Berman (2009); Chen and Popovich (2003); Mendoza et al. (2007).</td>
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<tr>
<td>2. Identify corporate needs and break general goals into narrow specifics.</td>
<td>The problems of the organisation (functional and business needs) must be defined for the right selection of the future solution. It helps to better control and assess the progress.</td>
<td>Xu et al. (2002); Light (2003); Bull (2010); Shum et al. (2008); Chang et al. (2010); Shang and Lin (2010); Rapp et al. (2010); Rahimi and Berman (2009); Chen and Popovich (2003); Sin et al. (2005); Mendoza et al. (2007).</td>
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</tbody>
</table>
3. Automate the decision-making process and re-engineered processes when necessary.
   It is important to define automatic procedures in certain decision to bring fastness on the processes. When necessary, re-define the structure and concept of existing processes.
   Xu et al. (2002); Light (2003); Sin et al. (2005); Shum et al. (2008); Shang and Lin (2010); Rapp et al. (2010); Saini et al. (2010); Rahimi and Berman (2009); Mendoza et al. (2007); Hang and Lin (2010); Chen and Popovich (2003); Lin et al. (2010).

4. Define clear and measurable business objectives for each phase of the adoption.
   It is important to define specific objectives as measures to achieve at the end of each phase of the software adoption.
   Xu et al. (2002); Adebanjo (2003); Light (2003); Shum et al. (2008); Rahimi and Berman (2009); Mendoza et al. (2007).

5. Learn from campaign mistakes and successes and Analyse customer database.
   The past results of campaigns will help to reach future improvements and the customer database analysis will offer a clear idea of the quality of their information.
   Xu et al. (2002); Sin et al. (2005); Chang et al. (2010).

6. Technical competencies are multifunctional.
   It is important to involve IT, operational and cultural knowledge in all the technological process.
   Adebanjo (2003); Shum et al. (2008); Chang et al. (2010); Rapp et al. (2010); Chen and Popovich (2003); Mendoza et al. (2007).

7. Develop one-to-one marketing.
   One-to-one marketing allows customers to receive unique solutions for their specific needs as helps to win their loyalty and satisfaction.
   Sin et al. (2005); Mithas et al. (2006); Chang et al. (2010); Mendoza et al. (2007); Rahimi and Berman (2009).

8. Integrating innovation capabilities.
   It will help to develop a unique and efficient CRM strategy (product, process, administrative, marketing and service).
   Lin et al. (2010); Chang et al. (2010); Chen and Popovich (2003); Mendoza et al. (2007).

Table 2 – CRM CSF related to process

On another hand, CRM CSF related to processes link the organisational and CRM needs to the technology.

<table>
<thead>
<tr>
<th>Critical Success Factors</th>
<th>Description</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Accessing the central customer database.</td>
<td>Using this database, anyone in the organisation can know all the details of each individual customer.</td>
<td>Xu et al. (2002); Adebanjo (2003); Sin et al. (2005); Bull (2010); Mithas et al. (2006); Shum et al. (2008); Chang et al. (2010); Rapp et al. (2010); Saini et al. (2010); Chen and Popovich (2003); Mendoza et al. (2007).</td>
</tr>
<tr>
<td>2. Automated scripting based on known solutions.</td>
<td>The efficiency and quality of call center and help desk supports are improved through these solutions.</td>
<td>Xu et al. (2002); Sin et al. (2005); Shum et al. (2008); Chang et al. (2010); Rahimi and Berman (2009); Mendoza et al. (2007).</td>
</tr>
</tbody>
</table>
3. Develop a central data warehouse including analytical tools for new and old data. Through these technologies, specific information’s about the customer needs can be created. This data can be data mined and analysed to discover new customer characteristics and to create new opportunities to increase their retention. Xu et al. (2002); Light (2003); Adebanjo (2003); Shum et al. (2008); Chang et al. (2010); Rapp et al. (2010); Rahimi and Berman (2009); Chen and Popovich (2003); Mendoza et al. (2007).

4. Configurable application. The more tailored are the requirements of the organisation, closer the solution responds the real needs of the organisation. Adebanjo (2003); Light (2003); Sin et al. (2005); Shum et al. (2008); Chang et al. (2010); Rahimi and Berman (2009); Chen and Popovich (2003); Mendoza et al. (2007).

Table 3 – CRM CSF related to technology

Through the analysis of each table, it is possible to find CRM CSF’s which create connections with each internal resource. Considering this observation and according to the literature, the success of a CRM strategy depends on the strong relation and connection between each internal resource.

2.2 How to select a CRM software?

When an organisation decides to acquire an Information System like CRM software, it is important to know specifically for what it is needed and what kind of necessity and difficulties it will solve. That’s why nowadays organisation create project teams to define and organize all the fundamental steps to follow in order to successfully achieve the adoption of the right IS solution [Jadhav and Sonar 2009].

To select the right IS solution for a CRM project, the project team has to follow and respect a set of rules [Ahituv et al. 2002]. Through the following table, we analysed four different software selection methodologies and observe a set of different phases that must be attend:

<table>
<thead>
<tr>
<th>Phases</th>
<th>Authors</th>
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<tbody>
<tr>
<td></td>
<td>Ahituv, Neumann and Zviran (2002)</td>
</tr>
<tr>
<td></td>
<td>JadHAV and Sonar (2009)</td>
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<tr>
<td></td>
<td>Chau (1995)</td>
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<tr>
<td></td>
<td>Colombo and Francalanci (2004)</td>
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<tr>
<td>1. Definition of the project objectives and aims</td>
<td>X</td>
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<tr>
<td>2. Market Analysis of IS solutions</td>
<td>X</td>
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<tr>
<td>3. Analysis of the Business needs and services issues</td>
<td>X</td>
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<tr>
<td>4. Define and select potential group of vendors and consultants</td>
<td>X</td>
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<tr>
<td>5. Build a RFP – Request for proposal to send to the</td>
<td>X</td>
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</table>
6. Investigate the alternatives of each of them through meetings  
7. Analyze technically each vendors and consultants proposal  
8. Assess the global proposal through technological, economical and organisational aspects.  
9. Select the 2/3 most interesting proposal and start negotiations’  
10. Contract and signing with the system vendor or consultant

Table 4 – Methodology for IS selection

Through the previous table, the following description intends to explore the methodology:

Phase 1 - Definition of the project objectives and aims: In the beginning of a IS selection process, the CRM internal resources like people and process are the more influent. In this phase it is important to build a strong spirit in the organisation where employees are focused and motivated sharing the same goals and views. On the other hand, the definition of the project objectives and aims can be changed in the future by the influence of the results of the following phase.

Phase 2 - Market Analysis of IS solutions: For this phase, processes and technology are the most important CRM internal resources, because it is through them that an organisation can decide and define the “guide-line” of what has to be done to select the right solution which fits better with its needs.

Phase 3 - Analysis of the business needs and services issues: All the three internal resources are crucial in this phase, they are all integrated together. It is through each of them that the project team will be able to select, recognize and analyze what are the real business needs and issues to solve with a IS solution.

Phase 4 - Define and select potential group of vendors and consultants: This phase can have some influences from processes, but, in reality, this step has a huge influence from the Know-How and experience of the Board of directors.

Phase 5 - Build a RFP – Request For Proposal to send to the select group: During the RFP definition, processes and technology need a special attention because it is essentially through them that the organisation will be able to define strategies and requests to solve cultural, technical and process issues.
Phase 6 - Investigate the alternatives of each of them through meetings: In this specific step, it is really important to know deeply each solution. It is important to be able at the end of this phase to distinguish perfectly the strengths and weaknesses of each alternative.

Phase 7 - Analyze technically each vendors and consultants proposal: To analyze technically each proposal, factors from processes and technology need to be strongly considered, they are the key factors for the future quality of the IS solution.

Phase 8 - Assess the global proposal through technological, economical and organisational aspects: For the final assessment of each proposal, it is important to include organisational and economic issues due to the fact that financial and cultural reality change between each organisation and in that case the priorities are different. In this phase it is common to adopt analytical models to obtain a quantitative average in order to define a ranking of each proposal.

Phase 9 - Select the 2/3 most interesting proposal and start negotiations: According to the analysis done by the project team, the board direction will select the two or three solutions with the best assessment. In that moment, short negotiation will be done with each.

Phase 10 - Contract and signing with the system vendor or consultant: Finally, in this last phase, all the details for the next stage (implementation) are being considered to combine the best conditions for the success of the rising IS solution.

3. Methodology

This research was developed through a qualitative approach based on Action Research method. According to Altrichter et al. (2002), Action Research is a research method where researchers and participants work together to reach and find an answer and solution for a specific problem in the organisation. On a first hand this collaboration intends to allow participants to increase their skills as to solve specific issues bringing improvements in their processes. Secondly, with their participations and observations, researchers have the occasion to reach new scientific learning’s and knowledge’s.

Baskerville and Myers (2004) refer that Action Research has an important role in Information System research due to its focus on real organisational problems and where they can applied action-oriented changes.

The following action research was developed in one of the most prestigious Universities of Management and Economics in Portugal and for reasons of confidentiality, this organisation will be called Sigma University. Sigma is a public higher education organisation with approximately: 4800 students, 200 academic staff and 50 employees.
As presented in the Figure 1, to develop a successful Action Research method, Baskerville (1999) explains that it is important to interpret this method as an organic process with five systematic phases which sometimes can involve repetitive cycles.

![Action Research cycle](image)

Figure 1 – Action Research cycle
**Source:** Baskerville (1999, p. 14)

Figure 1 describes each different phases of an Action Research method:

- **Client-System Infrastructure** – Is the research environment where researchers will develop and conduct their study. To achieve their goals, we will have the collaboration of the organisation to define specific actions. Our research was developed in a Portuguese University which decided to adopt CRM.

- **Diagnosing** – The diagnosing phase intends to identify inside an organisation the main problems which causes the necessity to evolve as to improve their strategies. Our study is about a public higher education with a historical reputation where all the internal management processes have specific rules and where employees have strong cultural attitudes from public organisations.

- **Action Planning** – This phase looks to involve participants and researchers to work together in order to specify actions to be taken in order to improve the primary problems identified. The actions of this phase are guided by a theoretical framework which intends to define the future targets to improve and how to achieve them.

- **Action Taking** – The action taking looks to implement the planned action. At this stage researchers and participants work together with the same purpose: ensure that improvements are made.
Evaluating – Once all the actions taken are achieved, participants and researchers must evaluate the results reached. In the case of the results are not positive, the team must define the next steps and review where the problem arose.

Specifying Learning – In this last phase, the pretended is to show that specifying learning it is a process present in each different preview phase. Actually the knowledge obtained is gained through the experience won through: (1) Organisational restructuration’s; (2) Successful changes gained from theoretical frameworks applications; (3) Unsuccessful changes created by different situations.

For this project, the team was composed by one director of the school, two marketing collaborators and two researchers. It is important to refer that one of researchers was also one of the marketing collaborators. During all the selection phase and as referred in the next sections, the researchers did several studies with the following main keys: (1) collect information’s about similar cases; (2) Understand what could be done in the school; (3) Set a number of guidelines for the future steps and (4) Define good practise in the adoption of CRM solutions in Higher Education organisations. Besides that, the researchers collaborate deeply in all the selection process and we played an important role contacting all the different customer services to create a relation with them and to get them involved from the beginning.

Finally, before we present the description of the Action research cycle developed in the Sigma Higher Education Organisation, it is important to describe how much time this cycle took to be concluded successfully:

<table>
<thead>
<tr>
<th>Action Research Phase</th>
<th>Months</th>
</tr>
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<tbody>
<tr>
<td>Diagnosing</td>
<td>4,5</td>
</tr>
<tr>
<td>Action Planning</td>
<td>2</td>
</tr>
<tr>
<td>Action Taking</td>
<td>1</td>
</tr>
<tr>
<td>Evaluating</td>
<td>0,5</td>
</tr>
<tr>
<td>Specific Learning</td>
<td>0,5</td>
</tr>
</tbody>
</table>

As it can be seen in the Figure 2, the Action Research cycle took approximately eight months and half to be conducted. The Diagnosing phase represents 53% of all the time invested and the Action Planning represents 23%. As it can be concluded these two phases are important to develop a good action research cycle.
Finally, during all the cycle, the project team realized every week two meetings with the duration of one hour and half (total of 68 meetings which are equivalent to 102 hours).

4. Action Research – The Portuguese University CRM project

According to the different phases of the action research method presented previously, we describe for each phase all the steps done in the development of the CRM project and present which CSF and methodology phases of a IS selection are related with each Action Research phases.

4.1. Action Research – Diagnosing

The phases 1 to 4 from the methodology of a IS selection are related with the diagnosing phase of the Action Research.

![Figure 3 – Time invested in each phase of the Diagnosing phase](image)

Source: elaborated by the authors

- **Phase 1 - Definition of the project objectives and aims**

The idea of a CRM project started in a meeting with the board direction and specific researchers of the school. The subject was to find solutions to solve issues concerning the notoriety of the organisations, its relationship with his customers (mainly students and enterprises), the centralization of information resources, the creation of more value and the reduction of manual procedures in the daily work of the Sigma collaborators. From that moment, all the participants of that meeting realized that the main issue was in how to create a strong relationship with customers to reach their satisfaction to consequently obtain their loyalty and increase the number of retentions and new clients. In parallel we realized and concluded that adopting a CRM strategy would also helped the organisation to centralize the information as to increase the productivity of their collaborators.
• Phase 2 - Market Analysis of IS solutions

The board direction decided to create a project team to analyse the viability of creating a CRM project in a Higher Education organisation. The team did several studies and researches in a global concept to assess how this project would answer to the real needs of the organisation. First, we did market analysis and benchmarking studies to collect information’s and solutions in similar cases. On another hand, the real aim of these analyses was to find answers in what have been done until now in this particular field. More precisely, researchers and participants were working in finding what kind of solution’s Higher Education Organisation’s adopted and which benefits they reached.

• Phase 3 - Analysis of the Business needs and services issues

Once the results of the previous studies and researches were collected, the project team built together a set of guidelines. These guidelines were the different phases of the methodology described on the literature review. With this orientation lines, the project team was able to guide its work and we concluded that the next important step was to start analysing the business needs and services issues of the school.

To collect this important information’s we decided to interview the 11 different customer services: undergraduate office, post-graduate office, graduate office, Erasmus office, library, alumni association, marketing department, career development office, international office, counselling office and student ombudsman. This cycle of interviews was divided in 2 phases, the first one was the main interview which took more and less 2 hours for each service interviewed. The second one consisted in presenting to each customer services the results obtained for their agreement. To realize the first interviews an interview guide was created where the questions were separated in three parts: (1) customer/student relationship; (2) daily work; (3) Internal relationship.

Interviewing all these different services of the school, the team could collect all the business needs and issues of each different customer services. After this important work, the team triaged these data’s and selected just the business needs and issues that would fit with the vision of the pretend CRM solution. On the other hand, this previews work was the base for the construction of the Request For Proposal (RFP).

However, as the team always defended that it is important to create since the beginning a strong relationship, we decided to selected and analysed the issues collected previously which were not
used for the next step to offer solution’s to solve some of their difficulties. With this strategic action, the project team won the respect and trust of each different service.

- **Phase 4 - Define and select potential group of vendors and consultants**

After performing the previous deep analysis, the project team was able to define and select the future potential suppliers of the future CRM solution for the organisation. In this phase a market research was done to select the CRM solution of five suppliers. More precisely, the market research looks to analyse general aspects like: (1) The type of IS solution (i.e.: if it is friendly-user or not; if technically it is easy to install or not); (2) The reputation of the brand/company; (3) The financial investment (an average of it).

Before starting the first contact with the suppliers, the project team shared a document with the selected five suppliers. In this contact, two weeks before their official presentation in the headquarter of the organisation, a document with the CRM necessities of the school was sent to each supplier. After these two weeks, the project team and the board direction received each of them where we presented their solution and discuss with the organisation of what could be developed.

4.2. **Action Research – Action Planning**

After the end of the diagnosing phase comes the Action Planning phase. According to the following description, the phases 5 and 6 are related with this phase. During this phase, the CSF related to people and processes are the most influent ones due to the fact that they are more present during the development of the following phases of the selection process.

On the other hand, according to what was referred in the beginning, during the action planning phase the project team did at least 16 meetings to define perfectly the future objectives.

- **Phase 5 - Build a RFP – Request for proposal to send to the select group**

After collecting, triaging and selecting the right business needs and issues related with the CRM strategy defined for the Organisation, the project team was able to develop a RFP – Request for Proposal for the future selection process of the solution.

The creation of this document was very important for the entire organisation because it represents how a CRM solution has to answer to its real business needs. Detailing its construction, the document was structured in three parts. The first part intended to describe the CRM vision shared by the organisation. The second part, with 38 business requirements,
described the principal requirements for the business needs of the school. Finally, the third part, with 60 requirements, presented all the important functional requirements to have in consideration in the customization of the CRM solution.

- **Phase 6 - Investigate the alternatives of each of them through meetings**

Once selected, the board direction approved the choice and gave the permission to start the selection process. This process was divided in 3 phases. The first one looked to involve the suppliers and the organisation inviting them to our office where they had the opportunity to make a presentation to the project team and board direction of their adapted solution to our needs. After that, each supplier had more and less 3 weeks to answer to the RFP and present their proposal.

4.3. **Action Research – Action Taking**

During the action taking the phase 7 to 10 from the methodology of IS selection were used as guidelines and strategies to reach the objectives. For the development of each following phase, all the CSF had to be considered, however and once again, the critical success factor with more presence and influence during the process where the CSF related with people and processes. It is obvious that the technological ones are important because they can represent extra costs and investments but the most important thing in all the development of this process it is to find the perfect solution which fits perfectly with the needs of the stakeholders and the business needs of the organisation.

- **Phase 7 - Analyze technically each vendors and consultants proposal**

With the reception of each proposal, the project team started the analysis of each solution proposed by the suppliers. To realise this analysis, the team gave priority in the assessment of all the technical conditions, answers and offers presented by each supplier. More precisely we looked to assess the following points: (1) Answers of the requisites (technical and business needs); (2) Methodology chosen for the implementation (development and control); (3) IS solution, support and IT requirements.

As described in the following phase, the same assessment technique was used (weight average). The final mark of these assessments was reported to the final global assessment of each group, also described in the next phase.
Phase 8 - Assess the global proposal through technological, economical and organisational aspects

After analysing technically each supplier proposal, the team used a method where we created an assessment map divided in five important groups: (1) Answers of the requisites (technical and business needs); (2) Methodology chosen for the implementation (development and control); (3) Team structure, size and experience; (4) Timing planned for the development of the project; (5) “Supplier assessment” (financial situation, local representation, contractual conditions, brand and corporate reputation).

Each group was assessed through the weight average technique. Using this technique of assessment, the team was able to generate a final value, which was converted to a final mark (1 to 20). At the end, a global map was created where each previews group was represented with different percentage weight. These weights were defined according to their importance and priority for the success of a project. With each final group mark, the global map was able to deliver the final mark of each supplier proposal.

Phase 9 - Select the 2/3 most interesting proposal and start negotiations

Finally, with the assessment concluded the project team was able to create a supplier ranking to select the top three suppliers (with the best marks) for the next phase of the selection process. In this phase, each supplier was invited to present his proposal to the board direction and project team to be discussed. During this discussion, the board direction looked to evaluate the strengths, weaknesses and details of the proposed solutions. The most important aspects defended by the organisation were: (1) the technical aspects; (2) how friendly is the solution for final users; (4) how the solution answers to the real needs of the school; (5) the total investment.

At the end of this first negotiation, the direction decided to eliminate one of the three suppliers to keep just de last two for a final negotiation. For this final step, both of the suppliers had to consider the suggestion given to modify their proposal and represent it. To conclude this negotiation process, through the last proposal presentation and through their experience, the board direction decided the final choice. However, the supplier chosen had to reanalyse its offer to present a proposal which fits with the expectations of the organisation.

Phase 10 - Contract and signing with the system vendor or consultant
Starting from this decision, the project starts his evolution. It is important to refer that the selected solution was not the solution in the first place of the ranking. The interesting part is the fact that the solution on the second place start to be the potential solution to be chosen. In fact, some days after the last presentations of the two last suppliers, the board of direction received a contact from high representatives of the enterprise from one of the two solutions. The principal subject of that discussion was the reduction in the investment of the CRM solution and that opportunity arises because the school was already a partner in other IS/IT solutions. Considering this condition, the board re-assess the last two solutions and observed that the real significant difference between the two was the cost of the final investment.

Since that moment, the negotiation of the contract started and together we defined a new project team. The definition of the new project team involved members of the previous project team and representatives of the supplier. Through that moment, the CRM project team started to apply a methodology for implementation where we defined new objectives and steps. From that moment a new and different cycle started.

4.4. Action Research – Evaluating

Observing the development of the selection process, the first thing to be concluded it is the respect of all the objectives defined for the development in all the selection process. Each selection phase was well developed, where the majority of the rules were followed and accomplished. To achieve the success of this process, it is important to have in consideration all the CSF. In each the different moments of this selection process, their involvement always played an important role. Finally, the following Table 5 presents the most relevant CSF in all the selection process:

<table>
<thead>
<tr>
<th>Organisational resources</th>
<th>Critical Success Factor</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Top Management commitment.</td>
<td>Having the school board integrated in all the phases, it played an important role for a better evolution of the whole selection process.</td>
</tr>
<tr>
<td></td>
<td>Communication of CRM strategy</td>
<td>Through a good communication of the CRM strategies, we could have a clear vision of the CRM needs and define correctly all the steps for the development of the selection process.</td>
</tr>
<tr>
<td></td>
<td>The end-users need to be involved since the beginning.</td>
<td>During all the cycle it was very important to contact and interact with the future end-users to understand their</td>
</tr>
</tbody>
</table>
needs and ideas about the future CRM solution.

| Process | Identify corporate needs and break general goals into narrow specifics. | Through the previous actions of contact with the end-users, the team was concerned in collecting all the details of their needs to define correctly what the CRM solution must have. |
| Technology | Configurable application. | Relating the two previous CSF, it was really important for the Sigma HEI to select a CRM solution which can be easily adapted to the specific needs of each department. |

Table 5 – Most important CSF during the selection process

4.5. Action Research – Specific Learning

For the successful development of the Action Research method, one of the most important factors was the integration of the researcher in the organisation. Through that integration, participants accepted the involvement of researchers. That integration gave the opportunity to researchers to offer new solutions, ideas, improvements, modifications and techniques to improve the efficiency of each customer service processes. However, during the analysis of the technical and business needs of each customer services, the project team had to face some difficult situations. In fact, customer services were trying to take advantage of their privileged relationship with the IT department to expose their daily work issues. To solve that, the team had to have the ability to know how to negotiate (without exaggeration) viable solutions to some of their problems in order to strengthen their support.

On the other hand, it is important to note that the solution selected it is not always the chosen solution to be implemented. Broadly speaking, as much as a technical analysis presents the best solution according to the data collected, there are always more sensitive external factors (which cannot be measured by analysts) which affect only the decision-making from the top of the hierarchy.

To concluded, the following table 6 presents a description of what the researcher found in each selection phase and what we did to solve it.

<table>
<thead>
<tr>
<th>Selection phases</th>
<th>Description of the situation</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1 - Definition of</td>
<td>In this phase the main influence for the definition of the project objectives</td>
<td>To define the objectives we collaborate with the board of directors offering suggestions</td>
</tr>
<tr>
<td>Phase</td>
<td>Description</td>
<td>Details</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>Phase 1</td>
<td>The project objectives and aims.</td>
<td>and aims came from the board of directors. and ideas for the future CRM solution.</td>
</tr>
<tr>
<td>Phase 2 - Market Analysis of IS solutions.</td>
<td>It was very important to have a good overview and understanding of what was done until now in CRM for higher education organisations.</td>
<td>We present several studies about similar cases related to CRM adoption in Higher Education Organisations and we also present different solutions existing in the market.</td>
</tr>
<tr>
<td>Phase 3 - Analysis of the Business needs and services issues.</td>
<td>Understanding the real needs of the school was an important step for the development of the project.</td>
<td>To solve that need, we did several interviews to the different customer services where we collected the required information’s and where developed a relationship with each contact point.</td>
</tr>
<tr>
<td>Phase 4 - Define and select potential group of vendors and consultants.</td>
<td>To start the next steps the board of directors asked for a list of potential vendors.</td>
<td>Through a market research we presented potential vendors with solutions that can be adapted to the business of a Higher Education organization.</td>
</tr>
<tr>
<td>Phase 5 - Build a RFP – Request for proposal to send to the select group.</td>
<td>To start the selection of the supplier of the future solution it was important to deliver a document with the description of all our requirements.</td>
<td>The solution was specifically creation of a RFP with all the vision of the project and the description of all our requirements.</td>
</tr>
<tr>
<td>Phase 6 - Investigate the alternatives of each of them through meetings.</td>
<td>During this phase the objective was to establish a first contact with the suppliers and understand their proposal.</td>
<td>In this phase, the researchers helped in defining a set of questions to ask to each supplier.</td>
</tr>
<tr>
<td>Phase 7 - Analyse technically each vendors and consultants proposal.</td>
<td>In this phase, the intended was to select the most interesting proposal in a technical view.</td>
<td>To realise that assessment we use a Weighted Ranking Assessment technique.</td>
</tr>
<tr>
<td>Phase 8 - Assess the global proposal through technological, economical and organisational aspects.</td>
<td>Once the previous phase was done, it was interesting to generate a global score of each proposal.</td>
<td>To generate that global score, we created a table with the final score of each aspects where we used the same previous technique.</td>
</tr>
<tr>
<td>Phase 9 - Select the 2/3 most interesting proposal and start negotiations’.</td>
<td>The school board needed a ranking of the supplier proposals to start the negotiations with them.</td>
<td>We present the ranking of the suppliers and a list with the strengths and weaknesses of each proposal to be used as the main topics during the negotiations.</td>
</tr>
</tbody>
</table>
During this phase the school board was negotiating with the two suppliers with the most interesting proposals. In this phase we were not involved and the solution selected was not the solution in the first place of the ranking presented.

Table 6 – Role of researchers in each selection phase

5. Final remarks

In a higher education environment, the concept of CRM can also be adapted in order to create and manage a strong and close relationship between the institution and their students and companies represented as customers.

The Higher Education Organisation Sigma always had a huge necessity to increase the satisfaction, retention and loyalty of its customers. On another hand, this necessity came at the same time to support the marketing strategy defined. Then, the organisation made the first step and started a selection process.

According to the literature review, the selection process can be considered as the most important step before the implementation. Through that, we pretended to answer to the question: *How the selection of CRM software for a Higher Education organisation could be influenced by people, technology and processes?*

As answers, first, all the three internal resources are equally important during the selection of a CRM solution. But, in each Action Research phase the Critical Success Factors related to people and process were the most influential one. The reason for that was the fact that people and process are the key factors for the acceptance of the CRM solution. In order to win that acceptance and to demonstrate the size of their value, it was crucial for the team project to involve these internal resources during all the cycle of the selection process. Besides that, the different CSF’s collected for each internal resource are an important contribution for the research due to the fact that they are significant guidelines for the work developed by the team project. On the other hand, it is important to refer that it is difficult to explain which CSF is related to each selection phase because a CSF can have an influence in all these different phases.

During the development of the study, the authors had some limitations to overcome and the most important one was how to face the resistance to change when the stakeholders thought that CRM was just another software to control the productivity of each employee.
Through this research the authors had the opportunity to develop successfully a full action research cycle which is an important academic contribution due to the fact it is an uncommon research method developed. The challenge of this research method is to follow specific steps and phases where researchers and participants must work together as a team inside the walls of the organisation. On another hand, as a professional contribution, any higher education or different type of organisation can follow, adopt and implement this methodology to select a suitable CRM solution.

Once this selection phase concluded, focused in this work the next step will be the development of a second research cycle, we intend to connect the two processes (selection and implementation) and offer a full document with all the important steps for the selection and implementation of a Customer Relationship Management at Sigma University.

6. References


