

# KNOWLEDGE MANAGEMENT ON THE IMPLEMENTATION OF A CRM PROJECT: A CASE STUDY

## *GESTÃO DO CONHECIMENTO NA IMPLEMENTAÇÃO DE UM PROJETO DE CRM: UM ESTUDO DE CASO*

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### ABSTRACT

Companies face high market demand and to remain competitive they need to invest in the relationship with their customers. Customer Relationship Management (CRM) implies not only a new use of a tool but also a changing of its strategic approach to the market. As seen in previous studies, CRM projects are very likely to fail, however, actions can be taken to help overcome these problems, such as proper knowledge management integration. With this study we are able to answer the following research question: how the company can use knowledge management in a CRM project adoption? In order to answer this question, after a literature review, a case study was conducted. Data collection was carried out through direct observation in the company, with the analysis of documents, and interviews. We can observe that there are a set of knowledge management activities that can help the adoption of CRM projects, even if there is no formal policy for knowledge management in the group or for this specific project. Knowledge sharing is seen as an enabler of better results for CRM projects.

**Keywords:** Customer Relationship Management, Knowledge Management, Knowledge Sharing, Case Study.

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## RESUMO

*As empresas enfrentam novos desafios e para manter a competitividade precisam investir no relacionamento com seus clientes. Customer Relationship Management (CRM) implica não só na utilização de uma nova ferramenta, mas também em uma mudança de abordagem estratégica. Muitos estudos apontam que os projetos de CRM tem muita chance de falhar, no entanto, há ações a serem tomadas que podem ajudar a superar esses problemas, tal como a gestão do conhecimento. Neste artigo procurou-se responder a seguinte questão de pesquisa: Como uma empresa pode utilizar a Gestão do Conhecimento em projetos de adoção de CRM? Para tanto, depois da revisão da literatura, foi conduzido um estudo de caso. A coleta de dados foi feita através de observação direta na empresa, com análise de documentos e entrevistas. Verificou-se que a gestão do conhecimento e a partilha de conhecimento são atividades que estão presentes na adoção e implementação do projeto de CRM, mesmo não havendo nenhuma política formal de gestão do conhecimento do grupo ou para este projeto específico. A partilha de conhecimento é vista como um facilitador para potencializar melhores resultados dos projetos de CRM.*

**Palavras-Chave:** *Gestão do Relacionamento com o Cliente, Gestão do Conhecimento, Partilha do Conhecimento, Estudo de Caso.*

## 1 INTRODUCTION

To create business value, a growing number of companies bet on enterprise integration that underly e-commerce, Enterprise Resource Planning (ERP), Customer Relationship Management (CRM) and other advanced uses of Information Technology (IT) (LEE, 2004). Customers are the reason for the existence of any business enterprise and today's organizations must manage customer interactions across multiple communications channels, including web, call centers, field sales, dealers or partner networks (RAI, 2011). The challenge is making it easy for customers to do business with the organization the way they want to, at any time, through any channel, in any language or currency and to make customers feel they are dealing with a single unified organization that recognizes them at every touch point (RAI, 2011).

CRM is a tool that can help organizations to coordinate relational aspects with the customer, having gained in recent years, much prominence in the strategy adopted by companies. However, combining the areas of marketing, IT, sales and management using CRM, will require the existence of certain organizational skills and, therefore, it is necessary to identify what skills exist or need to be acquired to make CRM profitable.

CRM being at the forefront of integrated use of IT and hence on the necessary changes for the organization to adapt to the new reality of dealing with the customer, it is therefore necessary to create critical opinion in this area, and over time there are several studies in this direction (BOSE; SUGUMARAN, 2003; BENMOUSSA, 2005; PEDRON; SACCOL, 2009; OLKOSKI et al., 2009; SAINI; GREWAL; JOHNSON, 2010; HILLEBRAND; NIJHOLT; NIJSSEN, 2011; GARRIDO-MORENO; PADILLA-MELÉNDES, 2011; BRAMBILLA, 2012).

CRM is not independent of Knowledge Management (KM) strategies and mechanisms, so most of the authors refer to the inevitable cross-linking of both, as well as proper knowledge sharing within organization that can lead to a successful CRM project (FAN; KU, 2010).

This case study is based on a CRM project adoption in an international Swedish group. In this paper, we mainly observed the Portuguese subsidiary view of the project. This is a service company, Fw (a fictitious name), that is primarily dedicated to sales and after-sales of industrial equipment. It currently has a total staff of ten from which eight have some type of relationship with the client and seven of them are directly related with the sales process. The Portuguese subsidiary follows international guidelines through the local managing director. Marketing and

IT departments are centralized in the country of origin at the European level. By decision of the group management, a CRM project was to be implemented in all its subsidiaries, including the Portuguese.

Thus, this paper aims to know “how the company can use knowledge management in a CRM project adoption?”. We are looking to identify the knowledge management mechanisms to improve CRM project adoption.

This paper is organized into six sections. After this introduction, we present a literature review that gives a fundamented picture of previous studies. The third section discusses the adopted methodology. In section four the case study is described, the company is presented and facts of the CRM implementation are made explicit. Section five presents the discussion and in the last section the final considerations are taken.

## 2 LITERATURE REVIEW

### 2.1 Customer Relationship Management

Authors diverge on the way to define CRM, for some it is the way to identify, acquire and retain customers, for others it's the way of automating the front office functions of sales, marketing and customer service (SUE; MORIN, 2001). The purpose of CRM is to efficiently and effectively increase the acquisition and retention of profitable customers by selectively initiating, building and maintaining appropriate relationships with them (PAYNE; FROW, 2006). Sue and Morin (2001, p.2) propose CRM as “a technology-enabled business strategy whereby companies leverage increased customer knowledge to build profitable relationships, based on optimizing value delivered to and realized from their customers”.

According to Payne and Frow (2005, p.168) “CRM is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of relationship marketing strategies and IT to create profitable, long-term relationships with customers and other key stakeholders.”

Pedron and Saccol (2009) identified that CRM can be viewed in three ways, as a business philosophy oriented to long-term relationships with customers, as a business strategy producing an increase on sales, profitability and customer retention, and a third way which is strictly technological, emphasizing information systems to collect, analyze, interact, build and manage relationships with customers. The authors refer and point to a wide vision of integration between the three ways, the philosophy is supposed to command and lead organizational strategies (CRM as strategy) and these strategies should lead and guide IT applications for CRM seen as a tool. CRM is not a magical solution to solve the problems of organizations but one of the most demanding business strategies to hold within the organization (FAED; RADMAND; TALEVSKI, 2010), with irreversible impact on benefits or losses (FRYGELL; CARLSSON; HEDMAN, 2011).

In CRM, customers are the leading key. Collection and analysis of all customer related information and the interaction between customer and organization are the main points to be held. Information collected from customers using IT tools such as web and email or call centers, field actions or partnerships can be accessed by the organization's marketing department to develop ways for a better relationship with the customer. Management can also use this information to analyze and follow sales actions, customer tendencies and their profitability. All these communication and information sources provide good sustainability to the back-office and the

administration, which helps to make decisions. On the other hand, customers well understood and deeply known by the organization can be better served and more easily satisfied.

Since changing suppliers/brands may generate switching costs, it would therefore be the main reason why customers hesitate to switch their usual banks, utilities or other suppliers, and the avoidance of switching costs also turns out to be another reason for maintaining supplier loyalty. CRM can help companies to get loyalty from customers (PAYNE; FROW, 2005).

Another main objective of CRM is to enhance the services created for the customer and to better use information for targeted marketing (FAED, RADMAND; TALEVSKI, 2010). Indeed the final objective of CRM is to maintain customer loyalty, although this is usually resource-intensive, long-term and difficult to manage (BENMOUSSA, 2005) it ultimately provides shareholders with results, value and profitability (PAYNE; FROW, 2005).

To potentiate the human factor, not only within the relation customer/company but also the happiness, willingness and supportiveness of sales people's efforts (BENMOUSSA, 2005) is also an important objective of CRM. Moreover, the objectives presented in this section are generalized. Particular and unique objectives can be held to CRM due to specificities found in each company (PEDRON; CALDEIRA, 2005).

## 2.2 Critical Success Factors in the Adoption of CRM Projects

"Critical Success Factors (CSF) are the few key areas where 'things must go right' for the business to flourish" (WARD; PEPPARD, 2002, p.191). Determining CSF may help to crystallise a company's objectives, to emphasise priority activities, and to monitor progress.

To obtain a successful CRM initiative, companies need to perform a framework on vivid business to be focused on critical and fundamental functional areas such as customer support, services, marketing and sales (FAED; RADMAND; TALEVSKI, 2010), in order to get a value creation process (PAYNE; FROW, 2006). For the authors the creation of added value involves taking the outputs of the strategy development process and building a programme that simultaneously extracts and delivers value.

For many companies it is necessary to change organizational structure, processes and culture. Considering these questions, we present some factors that are relevant in a CRM project adoption and closely related to knowledge management:

**Adequate training programs:** Concerning other enterprise systems, the training of users is critical for the success of CRM systems, as Raman et al. (2006) stated. The adoption of CRM packages is usually followed by strong organisational and procedural changes. Rigby and Led- inghann (2004) state that it is very important to coordinate training programs that cover technological and organisational changes.

**Delivery of correct and adequate customer data to an employee and the technological tools managing this information:** Companies must offer their employees the necessary tools to develop a successful relationship with customers (RIGBY et al., 2002). It requires a good technological structure that allows companies to gather and integrate information about customers (RYALS; KNOX, 2001). The creation of an integrated knowledge repository across organisational boundaries is considered paramount (DOUS et al., 2005). Moreover, managers need to engage in the reengineering of business and sales process before the implementation of CRM packages (RAMAN et al., 2006). The authors believe that the previous activities will allow for the standardisation of data formats, fields, and entries.

**Coherence in organisational lines of direction:** The step of aligning business processes

must come before the implementation of the technology (RIGBY et al., 2002) and the working practices, because it will probably change the organisational structure and the corporate culture (RYALS; KNOX, 2001). The company must be prepared to show CRM support teams how to achieve their goals through new processes (RIGBY et al., 2002). The redesigning of processes, which allows companies to integrate customer information into the actual core processes (DOUS et al., 2005), is considered a CSF for a CRM initiative.

**Strong leadership:** Like other organisational initiatives that require high investment, e.g. financial or cultural changes, manager involvement is essential for the success of CRM adoption. The initiative must have the participation of all organisational members, and this is only possible if top management “buys into” the initiative (RYALS; KNOX, 2001; RIGBY; LEDINGHAN, 2004).

**New requirements for the employees:** A CRM initiative demands a new set of different activities and skills from the group of employees. Usually, individual employees are the laying foundation of customer relationships (RYALS; KNOX, 2001). However with this new approach, customer information needs to be collected, analysed and shared between all employees involved. This strategy requires information sharing among departments, to create a picture of the firm’s total relationship with the customer (RYALS; KNOX, 2001).

These factors are related with organizational changes, the spreading of new procedures in the company, absorbing new organizational values, departmental integration, among others. Garrido-Moreno and Padilla-Meléndez (2011) cross-link CRM and KM, finding that those KM capabilities affect CRM success.

### 2.3 Knowledge Management

Organizations, in order to take advantage of the skills and experience inherent in their structures and systems, as well as the tacit knowledge of the employees, should manage knowledge effectively, overcoming the fact that measuring and auditing knowledge levels is not easy. Given this, prior studies were held and different definitions can be found about knowledge management (Table 1).

KM definition	Author
KM is a process within the organizational structure which allows the evolution between tacit and explicit knowledge in order to strengthen the firm through their employees.	(NONAKA, 1994)
KM is the creation, extraction, transformation and storage of the good knowledge and information with the perspective of building better policy, modify actions and produce results.	(HORWITCH; ARMACOST, 2002)
KM is the management of a firm’s corporate knowledge and information assets to provide this knowledge to as many company staff members as possible as well as its business processes to encourage better and more consistent decision-making.	(BOSE; SUGUMARAN, 2003)
KM is the combination of actions and decisions to give firms sustainable competitive advantage.	(JASIMUDDIN, 2007)

Table 1: KM definitions considering different authors on the literature.

In this study, KM can be defined as the activities and managerial actions which allow the development, transmission, transfer and storage of knowledge, as well as providing real information to the members of the organization, allowing them to react and make the right decisions to fulfill the requirements and achieve organizational objectives.

Nonaka (1994) adopted a classical classification of knowledge into tacit and explicit pro-

posing a spiral of knowledge creation into organizations. Knowledge creation can be understood as a continuous process through which one overcomes the individual boundaries and constraints imposed by information and past learning by acquiring a new context, a new view of the world and new knowledge (NONAKA; VON KROGH; VOELPEL, 2006). If some mechanisms were applied, tacit and explicit knowledge are interconvertible in order to create solid knowledge, as described in SECI Model (NONAKA; TAKEUCHI, 1995).

The four levels of knowledge conversion proposed in the SECI Model are socialization, externalization, combination and internalization. Socialization refers to the interaction between individuals giving the opportunity to convert tacit into tacit knowledge. Externalization implies knowledge to pass from the individual to the group, that is, turning tacit individual knowledge into explicit collective knowledge. The combination stage refers to conversion of explicit into explicit knowledge; at this stage knowledge is transferred from the group to the firm converting the already explicit knowledge into complex forms.

Internalization is the phase where knowledge flows from the firm to the individual and explicit turns into tacit knowledge (NONAKA; VON KROGH; VOELPEL, 2006).

KM mechanisms can be integrated within the SECI Model of Nonaka and classified as KM practices and KM technologies, as the difference between them stands in the use of technology (OLIVEIRA; MAÇADA; CURADO, 2011). Different authors are cited by Oliveira, Maçada and Curado (2011), giving the most common KM practices and explanations for adoption (Table 2).

KM practice	Explanation
Communities of practice	Individuals united by a common interest and expertise to share knowledge.
Blog	Electronic diary published on the web.
Informal conversation	Conversation between employees.
Electronic discussion forum	It allows people to post messages and comments on other messages.
Meetings and Phone calls	Face-to-face or distant conversations among employees.
E-mail	Asynchronous exchange messages electronically using some technology.
Brainstorming	Informal meetings intended to generate ideas, with the aim of solving problems or identifying opportunities.
Expert systems	It is software that attempts to provide an answer to a problem.
Best practices	Activities or methods adopted by a firm to capture the best way to do something.
Instant messaging	Synchronous exchange of messages from people connected to the internet.
Creative rooms	Space in the firms that allow employees to be imaginative, inventive and innovative.
Intranet	A private network that uses the internet protocol.
Lessons learned	Regular meetings to discuss successes and failures in relation to a process and product, providing learning and identifying lessons that can be useful for other situations.
Repository	Information system for the storage and dissemination of organizational knowledge.
Mentoring	An individual with more experience in the firm contributes to the personal development of individuals with less experience in the firm.
Simulation programs	Software that replicates real-life situations.
Organizational newsletter	Private broadsheet for internal distribution.
Telephone	Telecommunication technologies (audio and video) that allow a meeting with people at different locations. Staff mobility between offices, teams and activities.

Voice mail messages	A person receives a pre-recorded message and then he/she has the possibility to leave a message in return.
Storytelling	Telling true or fictitious stories.
Wiki	Means of storing knowledge that is jointly constructed by individuals.
Teamwork	Activities carried out in teams.
Yellow pages / directory of experts	Identifying people with knowledge on specific topics.
Training	Individual or group training, either face-to-face or at distance.

Table 2: KM practices and KM technologies.  
 Source: Adopted from Oliveira, Maçada and Curado (2011).

Like Oliveira, Maçada and Curado (2011), Hosseini (2011) also identified and integrated KM mechanisms within the SECI Model, both with the intent of tagging, on each four levels of converting, where the mechanisms are more precise for creating knowledge.

To assist Socialization, Externalization, Combination and Internalization, and in order to identify the most suitable for KM, firms need to adopt suitable mechanisms after mapping the already existing mechanisms. This is because KM is likely to succeed if it uses the existing infrastructure as a base (HOSSEINI, 2011; OLIVEIRA; MAÇADA; CURADO, 2011).

According to Hosseini (2011), in the Socialization phase, face-to-face meetings, introductory virtual meetings, interviews and internal group chats, were identified as KM mechanisms in his study. Oliveira, Maçada and Curado (2011) also identify brainstorming, informal conversation, training, lessons learned, storytelling and mentoring as other mechanisms able to convert tacit into tacit knowledge.

In the Externalization phase, to turn tacit into explicit knowledge, the authors identified mechanisms such as the repository of data, communities of practice, intranet, blog, wiki, collaborative working (proposing new solution paths through group working) and discussion with critical thinking (HOSSEINI, 2011; OLIVEIRA; MAÇADA; CURADO, 2011).

In the Combination phase, where knowledge turns from explicit into explicit, and in the Internalization phase, where knowledge turns from explicit into tacit, the authors found considerable similarities with the KM mechanisms used, for example, best practices, blog, exams, quizzes, storytelling, peer reviews, project presentation, collaborative decision, lessons learned and communities of practice. It's interesting to notice that teamwork is identified as being an important mechanism in the Combination phase by Hosseini (2011) but it is not identified by Oliveira, Maçada and Curado (2011).

## 2.4 Knowledge Sharing

In order to get competitive advantage, multinational companies systematically combine and share knowledge within the organization, business units and subsidiaries, feeding the process of knowledge creation (REGNÉR; ZANDER, 2011). Several authors refer to difficulties in having knowledge sharing available from all collaborators or members of the organization, affecting transnational performance (MONTEIRO; ARVIDSSON; BIRKINSHAW, 2008; ADENFELT, 2010), as cultural questions were seen to have relevance on the willingness to share knowledge (SIAKAS; GEORGIADOU; BALSTRUP, 2010).

Liao, Chuang and To (2011) refer that the ability of sharing and distributing knowledge resources across functional boundaries enables the firm to fundamentally change its business processes. The knowledge resources shared not only facilitate cross-functional interaction but

also allow the repositories of knowledge among process participants, giving a better understanding of the entire process instead of fragmented parts of the process (LIAO; CHUANG; TO, 2011).

Multinational companies are very conscious about the time and resources spent on knowledge-sharing activities and are also concerned about the level of commitment of those participating in the network that could have negative impact on their personal productivity (AHMAD; DAGHFOUS, 2010). However, previous studies revealed that centralization limits the active initiative of a unit in sharing knowledge with other units by stressing the centrality of the headquarters in the organizational network (TAGLIAVENTI; BERTOLOTTI; MACRI, 2010). Research on cross-country communication has identified a variety of communication tools such as computer mediated technologies like e-mail, enterprise software applications and company databases, also face-to-face meetings, telephone and videoconference help to support the flow of information and knowledge within the central organization and subsidiary units (ADENFELT, 2010).

Bose and Sugumaran (2003) report the growing importance given by companies to the integration of knowledge management actions and CRM. Knowledge sharing is correlated with CRM profitability (FAN; KU, 2010). Considering this correlation the author refers to the high importance of not only internal knowledge sharing, within the organization, but also for external knowledge sharing. To Fan and Ku (2010) the effect of customer focus on the service process is stronger when external knowledge sharing is high, moreover the external knowledge sharing plays a role in the improvement of transnational firm's performance (HAAS; SNEHOTA; CORSARO, 2011). Concerning internal knowledge sharing, Fan and Ku (2010) refer to customer-focused firms that easily develop relationships with customers to disseminate and acquire market information as inputs to service process. This leads to necessary strong organizational knowledge sharing climate between the firm's staff. Both internal and external knowledge sharing is fundamental on the performance of CRM (FAN; KU, 2010). Further studies supported that there is a direct positive relationship between knowledge sharing and CRM (SHAQRAH; ALQIREM; ALOMOUSH, 2011) which is the way to get a solid competitive advantage (REGNÉR; ZANDER, 2011).

To sum up, the relationship of CRM with technology capabilities and KM is being recognized as an important issue in management research within the organizations (GARRIDO-MORENO; PADILLA-MELÉNDEZ, 2011). If it's known that CRM initiatives have a high rate of failure (PAYNE; FROW, 2006; PEDRON; SACCOL, 2009; SAINI; GREWAL; JOHNSON, 2010), it's also supported that knowledge management can overcome this problem (BOSE; SUGUMARAN, 2003; CHOI; LEE, 2003; MONTEIRO; ARVIDSSON; BIRKINSHAW, 2008; GARRIDO-MORENO; PADILLA-MELÉNDEZ, 2011).

### 3 METHODOLOGY

This research is a qualitative case study, based on a single case. Yin (1994) states that a case study can be applied to describe the real life context where the action occurs, to briefly evaluate the research and to explore situations where research evaluations have less clear or undefined results. This approach facilitates the exploration of a phenomenon within its context using a variety of data sources in order to produce a more complex thinking and explanation on the investigated matters (YIN, 1994).

The period of data collection took place between September 2011 and May 2012. The collection of data was made in person at the place of implementation of the CRM system in Portugal. We collect data through interviews, direct observation, public and internal documents of the company and a focus group.

Three semi-structured interviews were made to the Director of Marketing and Communication of the Group, to the IT Manager of the Group and to the Local General Manager in Portugal. The Director of Marketing is the head of the project so our intention was to understand the philosophical and strategical CRM approaches as well as how knowledge management is applied to CRM. With the interview to the IT Manager of the Group we did not only intend to understand how CRM can be implemented as an IT tool and all its IT requirements, but also to work as cross-point of information. The interview to the Local General Manager was aimed at knowing how the management feels about the CRM project and about the beliefs and expectations of the CRM from the local management point of view. Each interview lasted between one and one and half hours.

With the direct observation of public and internal documents of the company we wrote a field diary. The observation of the implementation and CRM training was prominent on the data collection, as well as the field diary registry on a systematic basis, where all comments, actions, conversations, discussions, errors or concerns from users and super users were entered, even if considered of minor importance at the time.

In order to collect data, we also conducted a focus group with all employees (nine) of Fw in Portugal. This focus group took place at the company two months after the CRM software was implemented. The main idea was to understand the perceptions of the employees about the CRM implementation. We used triangulation by multiple sources of evidence as described by Yin (1994). Content Analysis (Bardin, 1977) was used to analyze the collect data.

## 4 CRM PROJECT IN FW PORTUGAL SUBSIDIARY

### 4.1 The Company

Fw Group, a fictitious name, is a European leading company in sales, service providing and distribution of systems and equipment related to fluid handling in industry processes. It offers a complete portfolio and precise solutions of engineering on positive displacement pumps and systems responding to high demands of efficiency, trust and security.

The evolution of Fw Group, as a leading company in its business area, was mainly accomplished through fusions, strategic acquisitions and the alienation of non-essential activities. It emerged in Sweden, for nearly 40 years, as a way of diversifying markets and it is currently present in all European countries, and in 16 of them, subsidiaries have been implemented, such as Fw Portugal, which appears at the end of the 80's through a process of acquisitions and restructurings.

Currently Fw Portugal has nine full time employees and one in a part-time position (the accountant). Seven people are directly related with sales, five are external salesman and two internal sales and spare parts. In the employees are also included the local Managing Director and the Front Office secretary. From all of these ten employees we excluded the accountant from the list of the CRM users; all other nine are considered CRM active users in this study.

### 4.2 Before CRM Adoption and Roll-out

Before the CRM project arrival at the Portuguese subsidiary of Fw Group, there was previous and preparatory work, which aimed at examining how to best implement it and transpose it in the different countries, as a universal system for access to customer relationship information.

According to the interview given by the Director of Marketing and Communications of Fw Group the idea and the desire to have a CRM system working throughout the group arose

directly from the administration and management. In the year 2003 it took advantage of the fact that it was being implemented a new ERP system across the entire group, called ASW, to get also the SAM module (Sales and Marketing), which although not being a true CRM system, came to be its precursor inside the company's group.

By the year 2007 the jurisdiction of the SAM was still under the purview of the financial department of the group. Realizing then that the distance from this department to the customer was directly related with its ineffectiveness, the decision was made to change the track pad on the SAM to the marketing department, because it was found that it was the department, operating directly in the mother company, which would have more contact with the sales, salespeople, and consequently with customers. After this change, it went through the crucial process of evaluating the true potential of the SAM system, trying to see if it was just the organizational distance of the financial department which was inhibiting the over-cross and proper use of SAM.

If there are companies in the Group that have adopted the SAM, there were also others who have chosen not to adopt it. The Portuguese subsidiary was one of them, and from the beginning, it has considered it unattractive. This decision gave time to feed the system and the return of information that could be created through it, because as a small company there are limited resources and time must be maximized.

A joint team of enthusiastic users, salespeople, members of the marketing department and members of the IT department, came to the conclusion that SAM was not gathering the necessary requirements to be seen as an acceptable solution for CRM. The SAM was considered slow, user unfriendly, little integrative and with weak interaction with the customer. In addition, IBS relegated the SAM from its portfolio, which means that their assistance would undoubtedly be affected. Together with this set of factors, the administration's supported the continuing need of local companies to have a universal system of customer relationship. The result of this was the decision to adopt a new and real CRM system, leaving the distorted SAM.

The decision on which system would be adopted was the next step. To help in this decision, it was created a working group that included seven representatives from as many local firms, all related with sales, Germany, France, Denmark, Hungary, Sweden, Netherlands and Norway. In this set of countries are included larg subsidiaries (Germany; France, Netherlands), small subsidiaries (Denmark; Hungary), enthusiasts and skeptics of the new technologies, people who raised questions in favor of a new CRM project and against the SAM. This group was also joined by members of marketing, IT and of the top management. Together they created a list of criteria that the software had to fulfill, to meet the needs in the field.

Some CRM suppliers were invited to showcase products the met the stated basic criteria: user-friendly system, fast, open and easy access and robust enough to receive and save a lot of information, does not require the exchange of ERP installed but it is prepared to interact with it and with any other future changes of applications and e-commerce tools. Finally, the system must communicate easily with e-mail, Lotus Notes, where it was in. Having satisfied the basic criteria, the tie-breaking criteria would be the costs and prices.

The main solutions considered were: Microsoft Dynamics CRM, Salesforce Application, SuperOffice CRM, Sage CRM (LIMS) and Commence CRM. The two top finalists were the SuperOffice CRM and Microsoft Dynamics CRM, and the choice fell against the SuperOffice because this is more orientated to the Nordic markets and does not have translations for all countries where Fw is or that will eventually be. The high price to be paid for the SuperOffice translation to all necessary languages, turned out to be decisive in the choice of Microsoft Dynamics that had all the languages available. It was also found that, although Microsoft Dynamics enables the com-

munication with Lotus Notes, it would be much faster using the Outlook system, so it also opted for its implementation at the expense of Lotus Notes.

After the process of choosing the system, it was necessary to methodically and clearly indicate the needs that cut across the group in order to optimize the system and the fields of information and interaction. To accomplish this, the described working group was called to set expectations and goals that top management could have, if all the requirements were met. It was set out to double the total sales of the group, within 3 years after the CRM was fully installed and operational. This expected organic growth represented a little change on the group strategy, based on growth through acquisitions. However, when setting expectations and objectives do not expect the CRM to achieve the targets but it enables to free up time for salespeople to interact more and better with customers and therefore increase sales.

It was decided to use the method of phased roll-out, where the contents and actions would be relayed through successive countries, in a consecutive improvement basis. The implementation group has been extended to other countries and its subsidiaries for a total of sixteen people representing the same number of countries. Each of these representatives is responsible for the promotion of the project and the actions associated with it. This group is joined by four elements of the marketing department and a member of the IT department, in a total of twenty-one super-users.

In order to streamline and optimize transfer and knowledge sharing, channels have been created for this purpose, including a place on Google, accessible to all users, where questions can be made, indicate occurred errors or give opinions for optimization. These points are sectioned according to the theme, tagged and monitored as new, in process or resolved. All points are sorted and stored for future reference. In addition, it was created an emailing group, specific for super-users, facilitating communication concerning relevant and strict information or documentation which knowledge should remain only between the super- users.

It was considered that before the beginning of the roll-out plan, it should be done a pilot test, and according to documentation provided internally, the objectives were to test and verify the following:

- The CRM setup. Where customization should be identified and it adherence to Fw sales process.
  - Integration with ASW. The integration of CRM with the ERP system needs to be effective.
  - Data migration ASW/SAM. The migration of data from the ERP system and old CRM system should be checked to avoid surprises later on.
  - IT Infrastructure and HW/SW setup on the level of User PC. The personal computers or the laptops of each CRM user should be checked and updated up to a certain level of hardware and software.
  - Roll out process. The process of the roll out should be tested to understand what to do and when it should be done.
  - Educational package. The type of training which will be needed, should be well planned and executed as well as the type of materials to be provided, in order to maximize the attendance to the CRM.
  - Support Request system. Create and test, on the field, a system that allows people to be supported on their doubts and difficulties.

Furthermore, the pilot test would be used to recommend the following aspects:

- Working processes related to the CRM.
- The minimum of mandatory tasks that need to be performed by every user in order to get the full effect of the system.
- Improvements to the current setup that facilitates even more the use of the tool.

The choice for the pilot test was the Norwegian subsidiary. According to information available to super-users and as explained in the interview to the marketing director of the group, this choice was based on a number of factors. The fact of being a company that sells not only pumps but also other instruments completely different from what other companies sell, and the CRM system should accommodate all the needs of its broad portfolio. In addition the Norwegian company has people from wide range of ages, between 20 and 70 years old; this makes a very diverse computer literacy, so it is important to test the user friendliness factor of the system and appetite of older people to use new technologies. The Norwegian company also had experienced people in the use of SuperOffice CRM system, although in different conditions and specifications. Information from them could be useful for assembling and setting up the Microsoft Dynamics.

Norway did not use the old system, SAM, so it was impossible to test the migration of data from this old system to Microsoft Dynamics and therefore it was decided to extend the group of pilots over to two more countries, Denmark and Germany. The Danish company is much smaller in size than the Norwegian, and it was chosen not only for being a user of SAM, but also by its size; it is interesting to check the behavior of Microsoft Dynamics and its users in that context. The German company is the second largest group in the use of SAM, and it has extremely well defined processes and responsibilities.

The pilot in Germany tested the migration of huge amounts of information and it also tested a change on the routines of users that have very specialized tasks, the contrary of what occurs in the smaller companies where usually people need to accomplish different tasks.

According to the plan of the pilot tests they should be finished by the end of February 2011; however, it was delayed to the end of May 2011 due to its extension, for the two countries. These three countries have raised enough questions, important questions and issues that resulted in modifications and improvements to be implemented in the system since the first roll-out plan, starting in July 2011 in the Czech company, with other countries following. All information, doubts, questions, suggestions and problems encountered were recorded on the on-line system designed to share information accessible to all users internally in the Fw Group.

It was said by the Marketing Director of Fw that the three pilot tests aimed to test and evaluate the CRM integration, the system speed, the server behavior when confronted with loads of necessary information, but also evaluate the education acquired by users and the work performed on prior specification from the CRM implementation team. It is also said that no problems were detected with the organizational strategy and culture, all being in harmony with the CRM project, from local management to users. It is indicated that most of the problems emerged in the IT side, the setup, integration of data, the compatibility of the data migration from the SAM and the stability of the new CRM server.

Together with other smaller details found during the pilot tests, there were the aspects related with the integration and data migration that required depth intervention by the suppliers in coordination with the IT people of Fw, in the restructure and refurbishing of the system. In July 2011, it was decided to give two months of work on restructuring and reprogramming both the data transfer tool and the CRM fields to be optimized. The roll-out plan would be resumed in September 2011. These caused the need to increase the initial budget available for the project.

In several work plans, internal information and communications, the runtime and the budget are mentioned as key points. Towards compliance with the runtime, all countries and their local managers on CRM project were informed about the preparatory procedures to make in their companies before the data migration, training and roll-out to other users.

Concerning the lessons learned, due to the quality and maintenance of information to

be migrated from ASW and SAM. A solution is needed to be found in order to speed up the process. Coordinate works with IBS assistance.

According to the schedule of training and roll-out on each country, all prior actions, indicated in the above lists and tables, should be fully completed in the preceding week of the day training and roll-out. In this period of one week, migrations from ASW and SAM were made, data quality evaluation on ASW and SAM and the access to SAM should be closed.

It was considered important to perform these steps only one week before to prevent a long time void of information, because during migration and checks the access and inputs into the system were very limited.

### **4.3 First Training and Roll-out**

The roll-out was scheduled for all local subsidiaries of Fw Group. The roll-out was at the same time of first training on site. These training sessions were held by people of the CRM development group and, depending on the availability, it could be for marketing or IT people. In Portugal it was carried out by the Marketing Director and another marketing colleague from Fw Holding. The number of people invited to assist the first training changes, depending on how much users the local company has. In some companies it was created a small group to be trained and this group was responsible to train each user individually later on. In other countries, such as Portugal, the training was for everybody at the same time and at the same place. The training took two days and was mainly directed for practical matters on how Microsoft Dynamics works integrated with Microsoft Outlook.

After initial theoretical presentations and definitions, and after practical examples, the users were invited to put hands on work and create new contacts, create and follow a lead, create potential opportunities, create opportunities, connect contacts with business partners and respective opportunities, track e-mails and messages with CRM and close opportunities.

Contacts were defined as the people directly contacted by the salesmen. All contacts needed to be manually inserted, in the first time, and comprehended the name, e-mail address, phone and mobile number, fax number, position and cargo at the company. The business partner is the company or the entity that Fw will trade with. It could be created if it's a new one or directly imported from ERP system (ASW) if it's an already existing customer. Contacts are obviously related with business partners. A lead could be a thought, a hint or a clue to be followed. It could also be an order to be followed from the hierarchical superior. In some cases the lead serves as a starting point to get a contact. A potential opportunity is the situation after the contact has been made and before the opportunity. This is when the salesman thinks there could be an evolution to a real opportunity for selling something. An opportunity is created when an offer is submitted to the customer after enquire. This can come directly or from an identified potential opportunity. On the way to get the order it is established a rank status where the offer submission corresponds to 15% and the final purchase order corresponds to a 100% opportunity status. When there is a purchase order the opportunity is closed and goes for credit evaluation and invoice.

On each created opportunity it is also automatically created a unique reference number to identify the opportunity and the project. During the training it was also referred the importance to create an integrated quote through CRM. This is accomplished with the installation of a Word add-in that allows the automatic merging of information into respective fields of quote.

#### 4.4 Two Months after the Roll-out

Two months after the first training and roll-out, enquires were made to the users (nine) to understand what was the perception, acceptance and level of usage from users of the CRM system. When enquired on what was their understanding concerning the main objectives and benefits of the CRM, the majority of user's answers were to organize the job and facilitate the access to data related with the customers. It was also mentioned that it will probably free time to external salesman to sell more instead of spending time on searching disperse information. Although these are the main perceptions, there were also answers that revealed the concern of being internally controlled on their actions with the CRM.

Users were enquired on what their thoughts concerning the training and roll-out are. Eight of the attendants have the perception that the training held was good, well-structured and clear to understand the basics of the system. However, it was mentioned the intensity of training and the huge amount of information to be brained in a very short period. The users refer the need of more training sessions to proceed on further actions in the CRM, not only to other matters but also to reinforce the lessons learned.

It was asked to the users if they were using the CRM at the time. Nine users reveal that after the training they started to use the CRM, even if conditioned on their knowledge of the new system. However, seven attendants told that they do not use the CRM in a regular basis and the other two are using it occasionally. The main reason of this non-usage is very easy to identify, for all the users enquired pointed to IT problems, concerning the frequent breakage of the server and lousy slow internet connection. Five users refer that it takes much more time doing something in the CRM rather than using "his own" normal way to do it, although six users indicated to know how to create and use Contacts, Potential Opportunities and Opportunities; they are also able to use the Outlook add-on to Track messages in the CRM and use the Agenda to schedule their appointments. Only two users created Opportunities in CRM that ended into a sale.

When asked to identify their needs to start using the CRM in a regular basis, all users indicated that IT problems must be resolved, including a speed upgrade on the Internet connection. They revealed that it is almost impossible to work if the system is slow and falling down regularly. The majority of the attendants reveal their concern of having a tool to automatically create the quote form to send to the customers and avoid double work on doing the quote separately. However, there are users that indicated their preference to do quoting by the old way, because they said to have too much information in a wide variety to be presented, and they considered being restricted to standard forms as a limitation. One user revealed to feel uncomfortable with the English language, so they desire full Portuguese language software.

## 5 DISCUSSION

Processes oriented factors were generally well-established, giving capital for investment and full support of top management. It was identified an unavailable policy for knowledge management integration, however there are usage of some KM practices and technologies.

Knowledge management mechanisms, in this case knowledge sharing, can enable CRM adoption to succeed. In order to identify the knowledge sharing episodes applied to the object of this study, and at the same time respond to our main research question, table 3 was built.

Knowledge Sharing techniques	CRM Adoption at Fw
Repository of data	Was implemented a repository of information available to all CRM users. Users and super-users can post questions, doubts, state errors or propose changing through a Google place. The stated points are sectioned according to theme, tagged and monitored as new, in process or resolved. All points are sorted and stored for future reference. The team that is responsible for the answers and moderation is composed by IT and Marketing people. This can be seen as an Externalization phase of knowledge converting where knowledge turns tacit into explicit.
E-mail grouping	E-mail is used in a systematic basis to easily and inexpensively communicate. It were established some e-mail groups of interest depending on the level of information to spread out. Super-user email grouping is often used when information is not significant to all users, or when information should remain restricted to implementers. When information flows between groups of people within the same critical thinking, this can be seen as a process of Externalization to turn tacit into explicit knowledge.
Pilot test	Pilot testing was taken in three companies of the group corresponding to three different countries (Norway, Denmark and Germany). These choices allowed previous understanding on how things run in the implementation of CRM. Having companies with different dimensions, cultural and people skills, gave a wide representation of what could happen in the roll-out phase for the whole group. IT matters can be checked, software can be redesigned and strategy can be redefined, if needed.
Lessons learned	A project audit provides good opportunity to uncover issues, concerns and challenges during the project lifecycle. Lessons learned captured from projects or previous stages of a project, are the key for any organization. To ensure efficiencies over time, every success or failure can teach important lessons, developing into best practices. In the implementation of CRM at Fw, lessons learned were resumed and spread essentially through emails to super-users and to the implementation group. Lessons learned is also a knowledge mechanism applicable to convert tacit into tacit knowledge, explicit into explicit and explicit into tacit knowledge, being present in three phases of SECI knowledge creation model respectively, Socialization, Combination and Internalization.
Training	As one of the most important mechanism to convert tacit into tacit knowledge, training is fundamental on the implementation of the CRM project. The general strategy adopted for trainings depends on the dimension of the companies, the skills of the users and the availability of trainers. In the Portuguese company the training sessions were face-to-face, for all users, and individuals at distance only to super-users.
Brainstorming	Brainstorming is a mechanism where a group of inhibited people discuss new possibilities or ideas in order to develop a project. The objective is to collect as many as possible ideas, even if they are apparently not reasonable. In this project, brainstorming was used at a high level to define strategies and also at the user's level to adapt to the strategies followed. Brainstorming is a recognized mechanism to convert tacit into tacit knowledge.
Best Practices	Best practices are a mechanism to convert explicit into explicit knowledge (Combination phase) and explicit into tacit knowledge (Internalization phase). It can evolve to become better as improvements are discovered and lessons learned. In this project it was made some documentation and charting procedures to consistently specialize processes. As examples, best practices to optimize data to transfer from ASW to CRM; best practices to audit IT requirements and software installation.
Teleconference	Meeting at distance is a mechanism that can be used to convert tacit into tacit knowledge in the Socialization phase. This project is an extremely important tool, often used to provide one-way communication from few people at one location to a single person or a large number of people in another distant location.
Informal conversation	Informal conversation is a known and recognized mechanism to convert tacit into tacit knowledge. This is very important for involving people with their opinions and casual subjects without the pressure of formal speech or formal events. Informal conversations are usually shared with people that one is most familiar with, in our case, informal conversations are very useful to feel the commitment and willingness of users to the project.

Communities of practice	In this project communities of practice were slightly formed, not from people who share a profession or a craft but from chosen members to integrate implementation groups in a particular domain. As examples, the marketing team, combining a representative of each individual subsidiary company; the working group to decide what CRM system should be adopted. These groups have a common goal through the process of sharing information and experiences to develop themselves and new possibilities for the project or the company. This mechanism assumes high importance in the Combination and Internalization phases of knowledge converting.
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Table 3: Knowledge sharing episodes and its adoption in the CRM project at Fw.

Table 3 can help to respond to our main research question: “How the company can use knowledge management in a CRM project adoption?” Considering the literature available and the research of data in the company we can observe that knowledge management mechanisms are present in the adoption and implementation of the CRM project in the company, although it’s not clearly or formally stated as a concern or priority of the company.

We can also see that the main mechanisms of knowledge creation used are focused on the Socialization phase where knowledge turns tacit into tacit; however, it’s interesting to see that other characteristic mechanisms of other knowledge creation phases are present, completing a cycle according to the SECI model.

In this project, although there are some ways opened to discussion, the strategy and actions to be made are more or less imposed by the mother company to its subsidiaries, leaving not much space for user modeling. Knowledge sharing is centralized and spread out by the stated mechanisms.

The literature has other KM mechanisms and knowledge sharing activities that could be useful if applicable to this project, and that we couldn’t identify, such as intranet blog, wiki pages and directories of experts identifying people with knowledge on a specific topic. Instant messaging could also be a very useful mechanism for knowledge sharing. Because of its synchronous quick exchange, the use of Skype or other support of this type could be an inexpensive way to share knowledge too.

## 6 FINAL CONSIDERATIONS

The results of this study show that knowledge-sharing actions, part of knowledge management, can be an important part of the CRM adoption project. The case study shows that even without a policy for knowledge management installed into the organization, there are mechanisms used to create and share knowledge.

In this particular case, the company could implement a policy for knowledge management, not only applicable to the specific CRM project, but also for other main projects to be carried out. In spite of the fact that the CRM project of the Portuguese subsidiary company was not fully successful, the problems were mainly related to IT factors. Knowledge sharing tools are used to help change organizational processes and some cultural characteristics in all companies of the Fw Group. We considered the present case study suitable to exemplify how KM mechanisms can be an enabler to conduct CRM projects. Fw is an international company present in 16 countries. This fact reinforces how KM can help human resource training, new technological structure elaboration and in the development and implementation of new organizational processes.

Concerning this project, we also suggest the adoption of other knowledge sharing activities such as an intranet blog or a more intuitive easy accessing repository of data. We believe that the creation of internal yellow pages, which identify experts on specific topics would also be

a good help for individual users. All of these mechanisms could be integrated in a restricted area accessed via the public website. This would potentiate the usage of the website, minimize errors of access and increase the quotation of the website in search engines.

Further studies are needed to identify and gauge which of the KM mechanisms is the most important mediator to CRM success, also this might be combined with a the differentiation between ceremonial and economic performance of a marketing practice. We also suggest to study the adoption of KM activities and theoretical-based insights related not only with CRM but with other areas of marketing research and with daily practices which would likely be an effective support to salesman activities.

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