

# MASTERS IN BUSINESS SCIENCE

# **MASTERS' FINAL WORK**

DISSERTATION

# FACTORS THAT INFLUENCE THE SUCCESS OF CUSTOMER RELATIONSHIP MANAGEMENT ADOPTION

DIANA TAVARES GRAZINA MARTINS

May-2013



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DIANA TAVARES GRAZINA MARTINS

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#### Acknowledgements

The elaboration and conclusion of this thesis would not have been possible without the encouragement and help of many people, and to them I'm very grateful. For this reason I need to express my sincere appreciation and gratitude to those who directly or even indirectly contributed to assist me on finishing this task.

Firstly I need to thank my two supervisors, Professora Cristiane Pedron and Professora Winnie Picoto. Both directed me with openness, friendliness and great expertise which were essential for me to accomplish this work. They both were more than guides; they inspired me and encouraged me to do better and to keep working despite hard times. Moreover, I would like to thank them for the valuable suggestions and recommendations that both have given me.

Secondly, thanks to all my friends for also supporting me and cheering for me in good and bad times. To my exceptional classmates and persevering companions who have gone through this journey with me, many thanks: Ana Esteves, Carla Firmo, Carolina Martins, Nélia Sacramento and Vanessa Roque. But especially, I need to thank my best friend Joanna for all the assistance, support, friendship, encouragement and patience that she has always granted me.

Lastly but certainly not least, to my family who have given me the strength, the affection and courage to pursue what I care for and for always being at my side any time I needed. And to my parents I'll be eternally thankful that they have equipped me with many tools that will help me to succeed in life. Thank you for also providing me with the solid and fortunate education I had and for making me the person I am today.

Without you this would not be possible, so thank you all for being there for me and allowing this thesis to become a reality.

#### Abstract

The global market is constantly evolving which means companies need to continuously innovate their businesses and understand new ways to keep in touch with their customers. One way to do it is by resorting to Information Technologies (IT) such as Customer Relationship Management (CRM). This kind of information system allows companies to gather data from their customers and transform it into information they can use to better achieve any expectations their clients may have while engaging in closer relationships with them. However, not all companies can successfully adopt or implement a CRM system, and because of that, they may lose their investments or worse, their customers. The purpose of this research is to find an answer to the question - What factors can help companies adopt a successful CRM system? To answer it, it is necessary to understand what aspects marketing and information systems (IS) professionals think as essential to successfully adopt the system. To accomplish this, we build two instruments based on a previous work (Pedron, 2009) in which a set of fundamental objectives (23) and a set of means objectives (49) were identified as influencing factors of a successful CRM system adoption. Using a sample of about 200 professionals we applied Churchill's (1979) recommendations regarding the item's purification. All data gathered was analysed through exploratory factor analysis and, consequently, an output resulted with all the factors perceived as important by the professionals that can indeed help with the adoption of a CRM system. Although there are several studies about CRM adoption they are mainly exploratory. Indeed, no measures of CRM adoption success have been previously proposed. This study tries to fulfil this gap in the literature by proposing and validating two instruments for assessing the CRM adoption success.

Key words: CRM, adoption, implementation, instrument development, success factors, CRM objectives.

#### Resumo

O mercado mundial está em constante evolução, o que significa que as empresas necessitam de continuamente inovar os seus negócios e passar a entender novas formas para se manter em contato com os seus clientes. Uma forma de o fazer é através do recurso às Tecnologias de Informação (TI), como é o caso do Customer Relationship Management (CRM). Este tipo de sistema de informação permite que as empresas recolham dados dos seus clientes e transformem-nos em informação que poderão usar para conseguir atingir da melhor forma as suas expectativas, ao mesmo tempo que se tentam relacionar de forma mais estreita com estes. No entanto, nem todas as empresas conseguem adotar ou implementar um sistema de CRM com sucesso, e por isso, arriscam-se a perder investimentos ou pior, clientes. O objetivo deste trabalho é o de encontrar uma resposta para a pergunta - Quais os fatores que podem ajudar as empresas a adotar um sistema de CRM de sucesso? Para responder a essa questão, é necessário entender quais os aspetos que tanto profissionais de marketing como de sistemas de informação (SI) têm como essencial para adotar com sucesso o sistema. Para tal, vamos construir dois instrumentos com base num trabalho anterior (Pedron, 2009), no qual um conjunto de *fundamental objectives* (23) e um conjunto de *mean objectives* (49) foram identificados como fatores influenciadores para uma correta adoção do sistema CRM. Através de uma amostra de cerca de 200 profissionais utilizámos as recomendações de Churchill (1979) sobre a purificação de itens. Todos os dados recolhidos foram analisados por meio da análise fatorial exploratória, do qual resultou um output composto por todos os fatores percebidos como importantes pelos profissionais que podem realmente ajudar na adoção de um sistema de CRM. Embora haja vários estudos sobre a adoção de CRM estes são principalmente exploratórios. Ainda nenhuma forma de medição de sucesso da adoção do CRM foi até então proposta. Este estudo tenta preencher essa lacuna na literatura, propondo e validando dois instrumentos para avaliar o sucesso da adoção do CRM.

Palavras-chave: CRM, adoção, implementação, desenvolvimento de instrumento, fatores de sucesso, objetivos de CRM.

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## **Table of Acronyms**

CRM – Customer Relationship Management

- IT- Information Technology
- IS- Information Systems

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### 1. Introduction

Today's market is becoming more and more competitive. This is a result of globalization which raised the borders between countries, and made it possible for companies to reach them more easily. It is also caused by continuous technological evolutions, such as the internet, which allowed world-wide access. Consequently, a certain type of scenario is created wherein tremendous possibilities for customer growth can be found, seeing as an organization is no longer limited and restricted to its own country (Chalmeta, 2006).

However, companies do face a challenge; not only regarding how to gather more clients, but also trying to discover how to better retain the existing ones while fighting against already existing competitors. When they understand how to do that, a company will be able to consider itself relatively successful since it will have the ability to fully satisfy its customers. In that sense, it will mean the company's clients are loyal to the organization and, subsequently, won't feel the need to change anytime soon (Koçogly & Kirmaci, 2012).

For a few years now, there has been a growing concern in customer relationship management, and therefore companies have started to adopt Information Technology (IT) to help them better achieve said satisfaction for their clients (Saaeed *et al.*, 2011). It was for this reason that a new model linked to the relationship between organization and clients arose: the Customer Relationship Management (CRM). With the application of this concept, companies would be able to better access customer information and, in this way, grant themselves the prospect of identifying present needs and predicting future ones (King & Burgess, 2008; Maleki and Anand, 2008).

Nevertheless, just because CRM became mildly indispensable for an organization to reach success, doesn't mean that its adoption and implementation is easy and quick. The process of adopting CRM has actually proven to be a very tiresome and intimidating experience for a lot of companies and their managers, given that there isn't any "magical formula" to guarantee the success of the process (Maleki and Anand, 2008). Furthermore, without an explicit definition of CRM objectives to ensure a successful CRM adoption and, ultimately, its implementation and usage, organizations may face failure in this process (Shanks *et al.*, 2009). This is why it becomes particularly important to approach this topic and try to help organizations to better understand and put into practice the theory behind a successful realization of CRM.

Although there are several studies about CRM adoption they are mainly exploratory. Indeed, no measures of CRM adoption success have been previously proposed. This study tries to fulfill this gap in the literature by proposing and validating two instruments for assessing the CRM adoption success. The main goal of this research is to enhance the understanding about the factors that may influence the success of CRM adoption and find answers to the question - What factors can help companies adopt a successful CRM system? In order to achieve this, we build on a previous work (Pedron, 2009) which applies the value-focus thinking approach (Keeney, 1992) to understand the definition of means and fundamentals objectives for CRM adoption. Values specify what is perceived in the organization as important in decision-making, what key factors decision makers' care about when they are involved in a CRM system's project. Therefore, in our work we will develop two sets of CRM objectives that could be used as a guiding tool for decision making about CRM adoption.

So this paper is organized as follows. The first section is literature review where we explain the various definitions of CRM, CRM market, the advantages and disadvantages of this system, the possible causes of failure, and a theoretical background on the Value-focused thinking theory. The section after that describes the methodological approach and how data was collected. Next we analyze the data and interpret its results. Lastly we discuss the results and present our conclusions.

#### 2. Literature Review

In this section, topics like the definition of CRM, CRM Market, Benefits and Risks, Causes for CRM failure and Fundamental and Means objectives will be addressed to better understand what CRM consists of and how it functions. As a result it will be simpler to explain what can be done to help a manager comprehend what possible steps are necessary to take to be able to adopt a successful system.

#### 2.1. Definition of CRM

Through times and through literature there has been an immense amount of different concepts and definitions for CRM. The purpose of this paper is not to give an exhaustive description of CRM, but is intended to better understand it. Therefore it will be useful to analyze several definitions given by different authors so that it can be possible to grasp the utility of the system.

For Yaghoubi et al. (2011), CRM is the tool to effectively improve customer relationships and, consequently, retention, through a one-to-one relation that will result in a continuous interaction with the clients and their loyalty, since they will feel valued and well taken care off.

Bull (2003) is of the opinion that CRM, with help from Information Systems (IS), combines both technological factors and business with the intent of aiding organizations to better focus on their clients and, in that way, deliver to them exactly what they want and/or need.

In the meanwhile, Valsecchi et al. (2007, p.757) describe CRM as "a corporate strategy and a systematic approach based on relational marketing that has the aim to select and manage the clients in order to optimize their value in the long run and, consequently, to maximize value creation for the enterprise."

Perhaps one of the most complete definitions made in literature was by Payne and Frow (2005, p.168), which says:

"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 provides enhanced opportunities to use data and information to both understand customers and co-create value with them. This requires a cross-functional integration of processes, people, operations, and marketing capabilities that is enabled through information, technology, and applications."

One thing is for sure; the consensus appears to be that CRM is not only a technological tool but also a way of improving the bottom-line of a company by having more effective and efficient relations with the customers (Bull, 2003).

### 2.2. CRM Market

There has been a very visible growth in the world-wide CRM market in the past couple of years. From the next figure, it is possible to observe that fact:



Chart | Global CRM Market (\$Billions)

Although it is not illustrated from the previous chart, for the last six years, CRM providers have seen a growth of 1.5% per year (IBISworld.com, Report snapshot)<sup>2</sup>. But in 2011, for the major service providers, sales increased approximately 6.4%, and it is estimated to grow at least 4% per year, for the next 5 consecutive years. One of the many reasons for such a difference from previous years is that CRM is becoming more affordable which allows smaller companies to purchase it (Klie, 2012). The increased investment of the companies in this system only proves the fact that they are attributing much more importance to the customer and its retention (Verhoef, 2003).

**Chart 1 Representation of the World-Wide CRM Market** Source: Adapted from Trefis website <sup>1</sup>

<sup>&</sup>lt;sup>1</sup> <u>http://www.trefis.com/stock/sap/articles/67567/sap-2/2011-07-25</u>

<sup>&</sup>lt;sup>2</sup> <u>http://www.ibisworld.com/industry/crm-system-providers.html</u>

#### 2.3. Risks and Benefits in adopting CRM

There have been increasing complaints from companies that do decide to adopt CRM systems. One of the main critiques about it is the time and cost it takes to adopt and implement, and after that, the possibly limited benefits that come from it (King & Burgess, 2008).

The system execution is supposed to help companies gather information, analyze data and sales activities, and concretize an efficient customer support. By doing this, CRM would help boost companies' revenues and reduce the cost of services and marketing processes. Yet, lately there are an increasing number of organizations displeased with the system, because the majority is not reaching expectations (Becker et al., 2010; Hillebrand et al. 2011). And given that there are an ever growing number of companies that are buying and using CRM, the security risks attached to the system are also growing (Kim, 2010). This way, and even though the popularity of the system is increasing, companies should not buy it without understanding both benefits and risks attached to it. Therefore, it is important to understand both sides of the equation and comprehend what possible scenarios organizations may have to deal with.

In the literature, there are a few authors that approach this topic and evidentiate the risks attached to adopting and implementing a CRM model. The following are a few examples of the main risks organizations may face:

Risks	s Author					
-	Buying software from a vendor who	- Boardman (2005)				
	goes out of business;					
-	Buying software from a vendor who	- Boardman (2005)				
	doesn't have enough resources to update					
	it frequently or who doesn't give enough					
	support;					
-	Errors while inputting data which are not	- Aldhizer & Cashell (2004)				
	detected and therefore incorrect					
	information of customers being					
	registered in the data base;					
-	Unauthorized data access from	- Aldhizer & Cashell (2004)				
	disgruntled employees or computer					
	crackers, with the intention of selling the					
	information to the competitors;					
-	Dependence and loss of control if the	- Lacity & Hirschheim (1993); Benlian,				

company chooses the outsourcing option;	Hess & Buxmann (2009)
<ul> <li>Possible difficulties while integrating company processes;</li> </ul>	- Band (2009)
- Resistance to change;	- Band (2009);
<ul> <li>Inclination to forget processes improvement and therefore focus more on technology itself;</li> </ul>	- Corner & Hinton (2002)
- Difficulties to improve or update the system.	- Corner & Hinton (2002)

Table 1 CRM risks based on authors

By understanding the risks, managers are able to prevent regretful situations and minimize the risks associated with the adoption (Petouhoff, 2006). As is possible to see, the table involves mainly security risks and also the dependence on the software builder/vendor to correctly implement it and to keep upgrading it. These are risks that are somehow difficult to avoid, except perhaps security ones, where companies may install proper firewalls to better protect all information they have gathered (Boardman, 2005). As a result, it is very important to identify and control any access and security risks to prevent any leakage.

Another aspect that firms need to pay attention to is the call center (if there exists one in the company), because these are the people within an organization with a direct contact with the client, meaning, the way they interact with the client will affect their perception of the company and in that way also affect customer retention (Aldhizer & Cashell, 2004).

Although organizations have to be careful about the risks, if they do decide to follow a CRM model, they will be able to reap the benefits from it. The next table will present some benefits from the correct CRM implementation:

Benefits	Author
- Better quality relationship with	- Chang (2007); Coltman (2006)
customers;	
- Business process runs smoother;	- Chang (2007)
- Customer requirements are better	- Chang (2007); Coltman (2006); Aspinall et al.
understood;	(2001)
- Customer loyalty;	- Chang (2007); Hillebrand et al. (2011); Chen &

	Popovich (2003)
- Increased revenues;	- Chen & Chen (2004)
- Marketing costs reduced;	- Chen & Chen (2004)
- Lifetime value of clients increased.	- Ko et al. (2008); Kim et al. (2012)

#### Table 2 CRM benefits based on authors

As is possible to see, the table shows that organizations have much to gain when they choose to implement the system, and do it so correctly. Nevertheless, one must remember that business environments keep changing, and for that matter, organizations must keep in mind that for them to be able to even have a chance to succeed, in addition to applying the information correctly, they will also need to use the system in innovative ways (Chen and Ching, 2004). As Dickie (2010) said, the organizations that know the importance of innovation and know how to do it will see their business prosper.

The following topic will show that when companies do not have full understanding of what it takes to adopt and stick to a successful system, the whole process fails, which in turn leads to great losses, not only of investments but also customers.

#### 2.4. Causes for CRM Failure

Currently, organizations are facing a lot of challenges to implement CRM systems in an integrated way. Although the idea of having better insights of the customer data is extremely appealing, especially at this time where competition is increasing, it does not mean that all companies are capable of that fact and underestimating the complexity of CRM may be a crucial mistake.

Evidence of the unsuccessful initiatives of CRM keeps appearing (Finnegan & Currie, 2010). Earley (2002) affirmed that most CRM implementations failed, more precisely, about 75-85% of them. Payne (2006) stated that about 60% of CRM initiatives end in failure and that 69% of projects fell below the company's expectations. More recently, , Kim *et al.* (2012) pointed out that some organizations that invested in CRM projects, about 70%, came to the conclusion that there was no visible enhancement or declines in their business performances.

But why is it so difficult to correctly adopt it? Some authors are of the opinion that resistance to change, inside a company, is jeopardizing the process. Others, although they might agree with the previous opinion, think a narrow perspective of CRM as a technology is the main cause of failure (Finnegan & Currie 2010). Since IT is a part of CRM, the system is often mistaken as a technology tool only (Reinartz et al., 2004).

Furthermore, the fact that there is not only one sufficiently adequate definition of CRM adds to a list of reasons for it to fail. If an organization chooses to see CRM from a technology perspective, its view-point becomes very limited, and consequently there will be a big probability for it to fail. For this reason it is safe to say that the way organizations define CRM will affect the outcome of the project, since it will influence the way the adoption and implementation is conducted (Payne & Frow, 2005). It is extremely necessary to understand that CRM is much more than a piece of software; from a strategic point-of-view it involves front-office, back-office, various (if not all) departments, processes, and of course, people (Payne & Frow, 2005; Chen & Popovich, 2003).

For a successful adoption and implementation of CRM, companies should change their business focus and in that way, change the organization culture and processes, by switching from a product-centric view to a customer-centric view (Payne, 2006). They also need to link resources, such as informational, organizational and physical (Foss et al., 2008). For that to be possible, organizations will need to have their information systems up-to-date, as this is the only way for the "process of personalization, individualization, anticipation and even prediction" to work correctly so it is possible to meet costumers' needs (Maleki and Anand, 2008, p.67). It is also very important for companies to understand that different approaches to CRM must be taken from different industries, since they all have distinct ways of interacting with their customers (Beasty, 2005). So trying to implement a system for the main purpose of following a "trend" will result in failure because organizations will most likely overlook steps of the process that should be accomplished before ever trying to implement the system (Hillebrand et al., 2011).

However, a problem still remains. There is no unique definition for CRM, nor are there guidelines for its adoption and implementation so it becomes extremely hard for companies to understand what it is and how to apply it properly. But what if there were a list full of potential objectives that would help companies achieve a successful adoption and implementation? A list that companies could use to guide themselves with, so they would better understand what to do? That is the purpose of this paper: to understand the components organizations give more emphasis to in the system application, and in that way, agglomerate them all in a list where companies can check and see if they are following the correct procedures.

#### **2.5. Fundamental and Means objectives**

It is only possible for decision-makers to make good decisions if their values are expressed by objectives. Thus, it is necessary to build-up a set of objectives that will aid in a decision process (Keeney, 1992).

In this sense, it is important to understand what an objective really is. Keeney (1999, p. 535) states that "an objective is defined as something one wants to strive towards." But for it to become a clear and organized set of objectives for a CRM adoption and, as a result, implementation, it is necessary to divide the concept in two sets: the fundamental objectives and the means objectives. The former expresses what is crucial to realize, as for the latter, it helps achieve other objectives and in that sense it's implicated in that other objective.

Keeney (1994) distinguishes fundamental objectives and means objectives via Why is That Important? (WITI) test. After an objective is recognized, the decision maker should ask "why is that important?". Following that question, two scenarios can result: 1) The objective is a fundamental one, since it's one of the main causes for interest in the situation; or (2) The objective is a means one, because its importance is related to or implicated on another objective.

Consequently, an organization needs to understand that it's necessary not only to establish the company's goals and mission declaration, but also to state clearly what the strategic objectives are for CRM and differentiate them into two sets. This should be accomplished even if the organization has already stated the objectives for CRM adoption, since it is still necessary to organize them and write them down.

Pedron (2009) provides a list of useful and comprehensive objectives, known, as already stated, as means and fundamental objectives that can be found in the appendix (Appendix A). Building on that list, two survey instruments (one for the means objectives and another for the fundamentals objectives) were developed to access the underlying constructs of means and fundamentals objectives towards achieving a successful CRM adoption.

### 3. Methodology

Given that the purpose of this paper is to identify major objectives that companies find most important to succeed while adopting a CRM system, it was necessary to do a survey to find out what objects based on the list found in the Pedron (2009) were thought as imperative. Seeing as CRM systems are mostly used by companies, and since the purpose was to help companies better adopt it, it was necessary to ask respondents with knowledge about CRM, their perspectives about the level of importance of each item of the list. For that survey, the five points Likert-scale was used and it ranged from Strongly Disagree to Strongly Agree (Likert, 1932). A three phase research approach was undertaken in order to purify and to assure unidimensionality and reliability of the constructs. To reach these objectives we followed Churchill (1979) and Torkzadeh and Dhillon's (2002) recommendations.

#### 3.1. Data collection

This study aims at identifying the underlying factors that influence the success of CRM adoption. In order to accomplish that a 3-phase approach was adopted. In Phase 1, a pretest was made with three specialists with academic and consultancy backgrounds, and who were highly knowledgeable on CRM adoption. The 102 items that resulted from the Pedron (2009) were analyzed by three specialists that studied each one of them and pointed out the ones they thought should be eliminated, either because they didn't make sense or were repeated. As a result, 30 items were eliminated. The 72 remaining ones (Appendix B) were then translated from English to Portuguese by a specialist and back to English by another specialist so it would be possible to validate the translation. Those 72 items correspond to 49 means objectives (grouped in 14 initial constructs) and 23 fundamental objectives (grouped in 5 initial constructs).

In Phase 2, a pilot test was conducted using a sample of masters' students from a European university with backgrounds on CRM systems. A total of 97 usable responses were collected via an online survey (www.surveymonkey.com) (95% have working experience, the age average is 28 years old and the average of self reported knowledge regarding the questionnaire is 3.94 out of 5). After a brief explanation of the research objectives, participants were asked to identify the importance of each item of the list "*In your opinion, in order to maximize the success of CRM adoption, it is important to:*" For each item on the list, respondents would rate on a scale of one (strongly disagree) to five (strongly agree) the importance of them. We then conducted data analysis as described in the next section. As a result of this phase, it was proposed that 50 items be eliminated. However, given the theoretical importance of some of those items and the fact that the characteristics of the pilot subjects were not the same as the final sample, it was decided that some items from the previous list should remain for phase 3.

Finally, in phase 3 the means objective instrument and the fundamentals objectives instrument were further explored and tested. In order to accomplish that, a final survey with 55 items was launched to the marketing and information systems directors from 1000 Portuguese organizations (drawn from the Dun and Bradstreet database of companies operating in Portugal). Two emails, one addressed to the Information System director and the other to the Marketing director were sent to each organization inviting those professionals to participate in this project. In order to increase our response rate, two follow-ups were made by email. Additionally, a third follow-up was done by calling each organization asking those professionals personally to participate in the survey. A total of 210 valid responses were gathered on the third phase of this research. Table 3 presents the demographic descriptive statistics.

Sex	66% Male					
	34% Female					
Department	42% Information Systems					
-	43% Marketing and Sales					
	15% Other					
Industry	75% Services (mainly banking,					
	consulting and retail)					
	25% Industry (mainly car industry and					
	pharmaceutical)					
Education	95% are at least graduated					
Age	35 years (mean)					
_	•					
Degree of knowledge about	3.98 (mean) out of 5 (5 means very					
the questionnaire	knowledgeable)					
Experience with CRM	40% have experience on the usage					
	22% have experience on implementation					

Table3: Demographics of the final sample (n=210)

#### 4. Data analysis

In phase 2 of this research, data was analyzed with the objective of eliminating any residual items that were not important and therefore, showed no relevance to the successful adoption of a CRM system. To purify the scale and guarantee its unidimensionality and reliability we followed Churchill's (1979) and Torkzadeh and Dhillon's (2002) recommendations. Three statistical methods were combined in a sequential manner: first, the Cronbach's alpha for each construct was computed and items that would result in an increase of the computed Cronbanch's alpha were eliminated; second the corrected item-total correlation was calculated and items with

values bellow 0.3 were deleted; finally an exploratory factor analysis was conducted, and items that presented scorings greater than 0.35 in more than one factor would be eliminated.

The Cronbach's alpha is used to verify the existence of inconsistent behavior of an item by comparing it with others, and allows for the assessment of the reliability of the scale. Related to the purification of the items is the domain sampling model. Churchill (1979, p. 68) states that "the key assumption in the domain sampling model is that all items, if they belong to the domain of the concept, have an equal amount of common core. (...) If all the items in a measure are drawn from the domain of a single construct, responses to those items should be highly intercorrelated". Deriving from that, values of item-total correlation below 0.30 corresponding to low intercorrelation within the scale were deleted. With the remaining items we conducted an exploratory factor analysis for the means objectives and another for fundamentals objectives. This latter step aims at eliminating the items that are not factorially pure.

#### 4.1. Means Objectives

In phase 2 of data analysis we followed the three steps previously described to purify the scale. The reliability analysis eliminated 4 items, the corrected item total-correlation none and the factor analysis proposed the elimination of 33 more items. From a total of 49 items for the means objectives, 12 remained and were part of the survey launched in phase 3 of this study together with some of the eliminated items given the reasons previously explained. In order to test the factor structure resulted from phase 2, another exploratory factor analysis was conducted with the 210 valid responses gathered for phase 3. It is also important to state that, although we decided to maintain some of the eliminated items of phase 2, the outcome of phase 3 confirms the factor structure found in phase 2. Table 4 presents the factor analyzes results (phase 3) using principal component as means of extraction and Varimax for rotation for the means instrument.

	Factor			Corrected	
	1	2	3	Item-Total Correlation	Cronbach's alpha
Maximize relational marketing capabilities					0.79
Ensure capability to analyze costumers' data	0.83			0.67	
Ensure the correct segmentation of customers	0.81			0.68	
Ensure there is data to refine marketing campaigns	0.72			0.60	
Define organizational capacities to retain customers	0.61			0.47	
Maximize CRM orientation					0.65
Ensure complete documentation of the CRM system Ensure the CRM system has the desired		0.74		0.50	
characteristics		0.63		0.44	
Ensure differentiation of operational functions and CRM strategy		0.61		0.44	
Ensure the evolvement of business and IT in the strategic planning of CRM		0.57		0.32	
Ensure that the system does not require a lot of learning time		0.53		0.33	
Maximize CRM usage					0.62
Ensure employees have sufficient maturity to take advantage of the CRM system functionality			0.80	0.44	
Ensure CRM system supports user decision making Ensure that the adopted technology allows an			0.72	0.46	
orientation for the customer relationship			0.52	0.39	
Eigenvalue	4.22	1.35	1.02		
% Variance	35.13%	11.26%	8.52%		

Table 4 Factor analysis of means objectives (n=210)

The Bartlett's test of sphericity is 637,179 (p < 0.001) meaning that the data is wellsuited for factor analysis. Kaiser-Meyer-Olkin (KMO) is 0.85(>0.80 (Sharma, 1996)), meaning that the sample shares enough common variance to conduct factor analysis. The ratio of sample size to number of items is 10:1 which is just the minimum sample size required for factor analysis.

The factor analysis resulted in 3-factor matrix with eigenvalues greater than one. Each factor was easily interpreted as *Maximize relational marketing capabilities* (4 items), *Maximize CRM orientation* (5 items) and *Maximize CRM usage* (3 items). The factors presented explain 54.91% of the variance existing in the data. All the items listed within a construct are arranged in a descending order (highest loading to lowest loading), and all factors have loadings greater than 0.5. More precisely the range of loadings is: for *maximize relational marketing capabilities* 0.61-0.83; *maximize CRM orientation* 0.53-0.74; *maximize CRM usage* 0.52-0.80. Additionally, the Cronbach's alpha is greater than 0.6 for all constructs meaning that the instrument has good reliability. The total-

item corrected correlation is above 0.3 for all items, showing that items are correlated within each construct.

#### 4.2. Fundamental Objectives

After the purification steps taken on phase 2 of this study, we reached a list of 10 fundamental objectives. We applied the same item purification procedure as the one applied to the means objectives instrument. The reliability analysis eliminated 2 items, the corrected item total-correlation 2 and the factor analysis proposed the elimination of 9 more items. From a total of 23 items belonging to the original fundamental objectives instrument, 10 items remained. For phase 3, exploratory factor analysis was run again for the fundamental items that resulted from phase 2 with the 210 usable responses. Table 5 presents the results of phase three for the fundamentals objectives.

		Factor		Corrected - Item-Total	Cronbach's
	1	2	3	Correlation	
Maximize CRM organizational culture					0.73
Develop a wide CRM organizational culture Ensure a possibility of constant revaluation of	0.78			0.51	
CRM system Ensure communication between company	0.78			0.56	
employees in CRM activities Ensure the alignment of CRM systems with	0.73			0.58	
business projects	0.60			0.46	
<b>Ensure an effective relationship with CRM</b> <b>providers</b> Maximize the transfer of knowledge between CRM consultants and the company		0.71		0.36	0.53
Ensure that the CRM consultant is an expertise Ensure that a contract is made between the		0.72		0.35	
company and the CRM system supplier Ensure that the project risks are shared between	the	0.53		0.30	
company and its CRM consultants (Providers)		0.58		0.30	
Minimize CRM project risks					0.66
Define CRM project			0.83	0.50	
Minimize CRM project risks			0.85	0.50	
Eigenvalue	2.18	1.75	1.62		
% Variance	21.8%	17.5%	16.1%		

**Table 5** Factor analysis of fundamental objectives (n= 210)

Factor analysis was performed with the principal components as means of factor extraction and with Varimax for rotation. Bartlett's test of sphericity was 341,456 (p < 0.001) and KMO was 0.8. Again, our sample is adequate for factor analysis. The ratio of sample size to number of items is 21:1 which well above the minimum sample size

required for factor analysis. All the factors correspond to the same ones that resulted from phase 2. The resulting factors were easily interpreted as *maximize CRM organizational culture* (4 items), *ensure an effective relationship with CRM providers* (4 items) *and minimize CRM project risk* (2 items).

The factor analysis resulted in 3-factor matrix with eigenvalues greater than one. The obtained factors are able to explain 55.5% of the variance existing in the data. As before, all the items listed are arranged in a descending order, and all factors have loadings greater than 0.3. More precisely the range of loadings is: *Maximize CRM organizational culture:* 0.6-0.78; *Ensure an effective relationship with CRM provider:* 0.58-0.72; *Minimize CRM project risk:* 0.83 and 0.85. All constructs have Cronbach's alpha higher than 0.5 showing good reliability. Additionally, corrected total-item correlation is above 0.3 for all items, meaning that the items are correlated within each construct. Overall, the means objectives instrument and the fundamentals objective instrument present good psychometric proprieties.

### 5. Discussion

The purpose for this part is to acknowledge how important CRM is, through interpretation of the previous results, so that it is possible to understand the significance of both fundamental and means objectives items. This will be possible by comparing the findings with some existing theory.

As said before, there has been an exponential usage of CRM systems, or to be more precise, an increment of attempts to adopt a system which has become more and more notorious. Having said this, it is quite interesting and essential to approach this topic and find out what companies can do to successfully adopt a system that will surely help manage and relate to customers and therefore increase organizations' profitability and achievements. To do this it is vital to take a look at the results and understand the way to a better approach.

Before interpreting the results, it is important to point out that companies, before ever trying to adopt a CRM system, need to thoroughly comprehend their strategy, because this is the only way to correctly understand what they may need to change or improve in their business. The first possible step is to center their strategy on the customer instead of the product (Payne and Frow, 2005), by doing so companies are stating that their clients' satisfaction is the driving force of their business and the only possible way for it to be profitable and successful (Stefanou et al, 2003; Kim et al, 2012). This relates to

our findings, more precisely the items within the fundamental objectives, in such a way that focus on a customer-centric approach is necessary to possibly change or broaden the culture of the organization while ensuring the alignment of CRM systems with the company business, people and process (Chalmeta, 2006; Chen and Popovich, 2003). This process may not be that easy, since we are talking about people and new ways of realizing their jobs, which may result in resistance to change (Petouhoff, 2006). To resolve this, organizations need to encourage learning, so that the personnel are up-todate with all the necessary know-how to function with the system, and also promote communication between all employees instead of a harsh competition between them (Payne, 2006). Good communication will bring greater knowledge of the customer for the company and easier ways to access it. Here is where the role of manager is extremely important, since they are the ones who can promote such culture in the business. But they do not need to stand alone in all this. Consultants may be necessary to complete the tough task of a CRM adoption (Overfelt, 2006). If the consultant is an expert on the matter, the risks of the project should be shared between manager and consultant. To materialize this idea, a constant communication between both is necessary, since there is a sharing of responsibility and risks, and this will help in minimizing any complexities of the project. Overfelt (2006) emphasizes the idea that a prosperous business is one with an expert who serves as a guide to help the company achieve a successful CRM system, by using the consultant's expertise to reveal how to adapt CRM software to the company, as well as all the human resource around it. He even states that "engaging the help of a seasoned CRM applications consulting partner is just as pivoted as choosing the software itself for achieving these objectives." (Overfelt, 2006, p.64). Another way to minimize the risks of an adoption is by correctly defining the CRM project, as without this possibly none of the previous criteria will be accomplished.

The other set of objectives that this study has been working with and that will help realize the fundamental ones are the means objectives. Three topics have been highlighted by the companies within this objective: the relational marketing capabilities, the CRM orientation and its usage.

The first one relates to the necessary capability to analyze customers' data so it is possible to correctly segment them. This means that a company requires an understanding of the customers' needs, wants and expectations (Payne, 2006). This is only possible if there is a continuous communication between customer and company so

that all the data necessary to create a profile (or profiles) is gathered. But before all this, the company will need to understand its capacities and resources to retain their clients. As for the customer segmentation, it is a necessary step to identify groups that, in turn, will not only help the organization to better relate to their clients and in that sense satisfy their needs and, better yet, reach their expectations, but also comprehend which ones could be more profitable (Bull, 2003). Without this, it would be practically impossible to target clients and therefore, futile to use any marketing campaigns toward them since there would be no data to use for this purpose.

The second topic is about the system itself – a more technological and operational view of CRM. For the system to have a chance to be correctly implemented it needs to have all the documentation in order and all its characteristics aligned with the company's desires. Also, and as said here before, it is necessary to have a full involvement of business and IT personnel in the planning of the CRM while differentiating all the operational functions in the adoption and usage of the system. Basically, people need to know what their function is and how to collaborate with other departments (Maleki & Anand, 2008). This will help them to gather and interpret data more easily since the chance of repeating the same information about a certain user is lower. If everyone is completely aware of what they have to do and continuously exchanging information, then they will know what needs to be done and by whom. The last part necessary in this matter is the necessity of having a reduced learning time. As people in organizations often repeat, "time is money", and therefore the system needs to be as simple as possible so that the gathering of new knowledge is as fast and easy as possible.

Finally, the third one talks about the usage of the system. This translates to the needed maturity of the employees to take advantage of all functions of CRM, which in turn translates to ease-of-use and the ability to take full advantage of what the system has to offer. Since the employees are probably the most direct contact customers have with a company, it is important that personnel has experience and maturity so they can interact correctly with customers and be able to understand exactly what is needed of them (or the organization) (Aldhizer & Cashell, 2004). This interaction between organization and customers and the complete orientation of the adapted technology for customer relationships will also help gather data from clients which in turn will probably impact customer retention (Aldhizer & Cashell, 2004). Lastly the system needs to support user decision making, since employees need to be efficient at their work, and to achieve this, they need to have not only the ability to make decisions, but also the self-sufficiency

and criticality to revise and modify any processes to fit the needs and specifications of the customer (Shanks et al., 2009).

CRM cannot be an unchangeable system, it needs to be able to constantly adapt and evolve to both organization and customer needs. A correct synergy between departments is a key element to a good CRM. There needs to be a constant interaction between them as well as a continuous exchange of information so that a correct data collection is possible, since this is vital to a better understanding and differentiation of customers.

### 6. Conclusions

Even though companies understand some of the benefits of adopting and implementing an information system such as CRM, they have some difficulties accomplishing that. The purpose of this paper is to help organizations in their adoption process so things can run smoother and without too many bumps in the road. This may be possible through a list of important factors that companies need to realize. Fundamentally to achieve a proper CRM system which is correctly integrated with their organizations' needs, companies need to maximize relational marketing capabilities, maximize CRM orientation, maximize CRM usage, maximize CRM organizational culture, ensure an effective relationship with CRM providers and finally minimize CRM project risks. These steps are some of the key factors for the success of the project. Consequently this study of the CRM system can contribute to enlighten companies, which are already aware of the importance of the system and its' real-world application, on the factors that can make a business thrive.

As explained previously, this work was based on Pedron (2009) value-focused thinking study that came up with a set of CRM adoption objectives that were, in turn, based on Keeney's (1992) research. By means of grounding on Pedron's (2009) qualitative research, we conducted a quantitative study, in order to assess whether those values are applicable to other companies. In this sense, two sets of instruments were created to help measure both fundamental and means objectives.

After collecting the data from the surveys we proposed and validated two instruments: a 3-factor, 10-item instrument for measuring fundamental objectives and 3-factor, 12-item instrument for measuring means objectives. Both instruments presented had satisfactory levels of reliability. These are the objectives that may be able to help managers to successfully adopt the system, as this way they can more easily visualize (by means of

viewing the items from the list as steps to be accomplished) what needs to be done and achieved, so that they have a chance to integrate a successful CRM system into their business.

Additionally, the information discussed and studied within this thesis can be expanded on through further research consisting of content validity. This will examine whether the identified constructs and the items measuring them can adequately cover the factors that are responsible for influencing the success of the CRM project. Moreover, in order to validate the psychometric proprieties of the two proposed instruments a confirmatory factor analysis could be conducted. Due to a lower range of data (210 usable answers) this was not possible to accomplish in this research.

Apart from that, this thesis provides a valid necessary starting point for a deeper work into and a better understanding of CRM systems, as well as how they can be appropriately adapted and adopted, and the challenges troubles that face those attempting to work with them.

We expect that this study can fill the existing gaps in literature about this subject and can indeed help organizations to achieve competitive advantages in the current market. If companies want to be successful they will need to connect with their customers in new and innovative ways, therefore CRM becomes a decisive tool for this to happen and the next step that companies need to take to be current. Every day companies face a new and ever growing generation of consumers; this is the moment to create the new age companies to attract and win them.

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## Appendix

#### Appendix A – Initial list of CRM objectives

- 1. Maximize innovation
- 2. Ensure CRM Systems define innovative business orientation
- 3. Ensure that CRM Systems drive competitive strategy
- 4. Maximize professionalism in CRM management
- 5. Maximize budget allocations for CRM
- 6. Define milestones for CRM activities
- 7. Ensure communication among stakeholders
- 8. Ensure stakeholder intent for CRM Systems is captured
- 9. Minimize territoriality for CRM applications
- 10. Harness the flamboyant behaviour of IT
- 11. Define benefits realization of CRM
- 12. Ensure ROI for CRM System projects
- 13. Recognize time taken for benefits delivery in CRM projects
- 14. Maximize benefits realization for CRM projects
- 15. Enable performance evaluation for CRM Systems
- 16. Ensure CRM project management
- 17. Ensure CRM consultant expertise
- 18. Maximize knowledge in using CRM consultants
- 19. Define a methodology for CRM system implementation
- 20. Minimize CRM project risks
- 21. Minimize unnecessary complexity in CRM System implementation
- 22. Ensure risks are shared among companies and CRM consultants (providers)
- 23. Define risk mitigation strategies for CRM implementation
- 24. Minimize resistance to change in CRM System implementation
- 25. Maximize requirement assessment for CRM
- 26. Ensure proper requirements assessment for CRM systems
- 27. Ensure there is complete documentation for CRM Systems
- 28. Ensure availability of time for CRM System design
- 29. Define user requirements for CRM Systems
- 30. Maximize ease of use
- 31. Make sure user interfaces are friendly
- 32. Make sure that system does not require a lot of time to learn
- 33. Maximize data consolidation
- 34. Ensure a well-defined data model exists
- 35. Maximize CRM orientation
- 36. Ensure training of employees in customer relationship management
- 37. Maximize efficacy of customer relationship processes
- 38. Ensure transparency of customer service processes
- **39.** Ensure customer service processes are not broken
- 40. Maximize integration of CRM system
- 41. Ensure integration of customer facing business processes
- 42. Ensure integration of systems in sales and customer relationships
- 43. Ensure availability of high quality information
- 44. Ensure capability to integrate CRM Systems during mergers and acquisitions
- 45. Ensure sister companies have a shared CRM vision

- 46. Maximize CRM integration among sister concerns
- 47. Maximize responsiveness
- 48. Ensure responsiveness to customer needs
- 49. Ensure timely response to customers
- 50. Ensure complete information on customers
- 51. Maximize data quality
- 52. Ensure adherence to data quality standards
- 53. Ensure integrity of data
- 54. Maximize currency of data
- 55. Ensure clarity in structures of responsibility
- 56. Encourage input from various customer relationship divisions
- 57. Define clarity in roles
- 58. Ensure differentiation in nature of work for IT and Business
- 59. Define an accountability structure
- 60. Ensure differentiation of operational and strategy roles
- 61. Develop an organizational wide CRM culture
- 62. Ensure alignment of CRM systems with business processes
- 63. Maximize fit between CRM software and business activities
- 64. Ensure ability to review business processes vis a vis CRM Systems vis a vis business processes
- 65. Ensure ability to review CRM systems
- 66. Develop a CRM oriented culture
- 67. Ensure a unified view of the company
- 68. Ensure engagement of Business and IT in CRM strategic planning
- 69. Develop hybrid manager capable of managing interdisciplinary requirements
- 70. Ensure a technology enabled customer relationship orientation
- 71. Ensure a marketing oriented technical competence for customer relationships
- 72. Maximize customer activity tracking
- 73. Maximize ability to monitor customer activities
- 74. Maximize data richness for CRM
- 75. Ensure customer segmentation
- 76. Maximize information on customers
- 77. Maximize use of business analytics for CRM
- 78. Create a product mix per analytic reports
- 79. Define abilities to ensure customer fidelity
- 80. Ensure there is complete data on customers
- 81. Ensure ability to analyze data
- 82. Maximize data for cross-selling
- 83. Ensure data exists to fine tune marketing campaigns
- 84. Ensure good CRM system procurement
- 85. Make sure that the CRM system has desired capability
- 86. Minimize fashion and fad relative to system capability
- 87. Maximize relevance of CRM System features
- 88. Maximize user empowerment
- 89. Ensure that users can take decisions on customer
- 90. Ensure that CRM systems enable user decision making

- 91. Ensure the users can get pertinent client information
- 92. Ensure employees have the maturity to take advantage of CRM functionality
- 93. Define CRM leadership
- 94. Maximize coaching of managers for CRM activities
- 95. Develop abilities for smooth transitions with respect to CRM systems
- 96. Ensure a learning environment
- 97. Ensure good project management (time, scope, cost) for CRM projects
- 98. Maximize stakeholder buy-in
- 99. Maximize customer participation in CRM
- 100. Ensure business division participation in CRM
- Maximize user involvement in CRM
- 102. Ensure engagement of top management in CRM project

#### <u>Appendix B – List of CRM objectives after Phase 1</u>

- 1. Ensure that all intentions of every stakeholder is perceived in the adoption of CRM
- 2. Define the company benefits with the CRM project
- 3. Recognize the required time to obtain benefits with the CRM project
- 4. Maximize benefits achievement for CRM projects
- 5. Define the risks of the CRM project
- 6. Minimize risks of CRM project
- Ensure that the project risks are shared between the company and its CRM consultants (Providers)
- 8. Ensure the involvement of top management in the CRM project
- 9. Ensure that companies from the same group share the same vision for CRM
- 10. Ensure the involvement of business and IT in the strategic planning of CRM
- 11. Determine an adequate budget for the project management of CRM
- 12. Ensure a positive ROI for the CRM project
- 13. Ensure that the CRM consultant is an expertise
- 14. Maximize the transfer of knowledge between CRM consultants and the company
- 15. Minimize change resistance in the CRM system implementation
- 16. Ensure the time availability of the CRM project team
- 17. Define an accountability structure for the CRM project
- 18. Encouragement for the participation of various departments in the CRM project
- 19. Clearly define the roles of the different stakeholders of the project
- 20. Ensure a good project management (time, scope, cost)
- 21. Ensure that the CRM project manager has interdiciplinaries competencies/skills
- Minimize the CRM applications "territoriality" (e.g. Marketing Department vs. Sales Department)
- 23. Avoid "extravagant behavior" in investments on CRM from the IT department
- 24. Determine and follow a methodology for the implementation of CRM system
- 25. Minimize implementation complexity of the CRM system
- 26. Ensure proper requirements assessment for the CRM system
- 27. Ensure complete documentation of the CRM system
- 28. Ensure that a contract is made between the company and the CRM system supplier
- 29. Ensure the CRM system has the desired characteristics
- 30. Minimize the question of fashion in the CRM system characteristics

- 31. Maximize ease of use of the CRM software
- 32. Ensure that the system doesn't require a lot of learning time
- 33. Correctly define the data model
- 34. Maximize the consolidation of CRM data
- 35. Maximize CRM system integration with other company systems
- **36.** Ensure integration of customer facing business processes
- 37. Maximize CRM system integration with same group companies
- Ensure that the adopted technology allows an orientation for the customer relationship
- 39. Ensure the alignment of CRM systems with business projects
- 40. Maximize the quality of customers data
- Ensure privacy of customers data
- 42. Maximize CRM data richness
- 43. Ensure the correct segmentation of customers
- 44. Ensure capability to analyze costumers data
- 45. Ensure there's data to refine marketing campaigns
- 46. Ensure the performance of CRM initiative is evaluated
- Ensure differentiation of operational functions and CRM strategy
- 48. Ensure that CRM system allows business innovation
- Ensure that the CRM system drives competitive strategy
- Define goals for the CRM activities
- 51. Ensure communication between company employees in CRM activities
- 52. Maximize managers coaching for CRM activities
- 53. Ensure that a learning culture for CRM exists
- 54. Maximize customer participation in CRM
- 55. Ensure timely response to costumers necessities
- 56. Define organizational capacities to retain customers
- 57. Ensure processes transparency in customer services
- 58. Ensure a consistent vision of the company to the client
- 59. Ensure the marketing department has skills for customer relations
- 60. Maximize the monitoring of customer activity
- 61. Define leadership ("ownership") of CRM system
- 62. Ensure employees training for the customer relationship management
- 63. Maximize CRM management professionalism
- 64. Develop a wide CRM organizational culture
- 65. Maximize employee empowerment in CRM activities
- 66. Ensure an adequate transition towards the CRM system
- 67. Ensure the information about the customer is complete
- 68. Maximize the compatibility between CRM and business activities
- 69. Ensure a possibility of constant reevaluation of CRM system
- 70. Ensure CRM system supports user decision making
- 71. Ensure users can obtain relevant information of customer
- 72. Ensure employees have sufficient maturity to take advantage of the CRM system functionality