Application of Customer Relationship Management Systems in Business: Challenges and Opportunities

K. Liagkouras, K. Metaxiotis

Abstract—Customer relationship management (CRM) systems in business are a reality of the contemporary business world for the last decade or so. Still, there are grey areas regarding the successful implementation and operation of CRM systems in business. This paper, through the systematic study of the CRM implementation paradigm, attempts to identify the most important challenges and opportunities that the CRM systems face in a rapidly changing business world.

Keywords—Customer Relationship Management, CRM, Business, Information Systems.

I. INTRODUCTION

OVER the last decade Customer Relationship Management (CRM) has attracted considerable attention from both academics and practitioners and billions of dollars have been spent for the deployment of CRM systems by businesses hoping to obtain a better understanding of the customers' behaviour that will assist them to build long term relationships with customers and boost their profitability and yet has not been determined a commonly accepted definition that will reflect CRM's main attributes. Below, based on a literature study we will attempt to identify the most important attributes of a CRM system and the interrelation between them. Exploring CRM main features will help us to expand our understanding of this important research field and to create a cohesive body of knowledge.

Additionally, we will highlight the main benefits for a company from the implementation of a CRM system, but also the potential problems during the implementation process and the operational phase. According to a number of independent studies [37], [48], [7] the success rate of CRM system implementation is alarmingly low, and combined with high implementation costs make the acquisition of a CRM system a highly risky business. Our intention is to lift this shadow from CRM systems that makes reluctant many companies to proceed to the implementation of such systems, although their undeniable benefits at theoretical level, by shedding light on the most common causes of failure during and implementation and operational stage. On top of everything else based on the literature study we identify the most important success factors during the preparation, implementation and operational stage of a CRM system. Finally, we will provide a section dedicated to

the future trends and opportunities in CRM research field and practice.

II. WHAT IS CRM?

When people refer to CRM most of the times they think of a system that includes technological aspects associated with marketing, customer service and sales. In other words, CRM provides the appropriate channels for the effective communication between businesses and customers. However, although there is a general agreement about its basic components, different authors put emphasis on different aspects of CRM systems. For instance, some suggest that it is a specialized collection of technological tools [2], [5], [6], [8], [10], [34], [47], others stress the organizational aspects [1], [5], [23], [29] of the system and finally others insist that it is nothing more than a tool for boosting company's sales and clientele [48].

The ambiguity surrounding CRM's nature is also permeated in academic literature [48]. For that purpose we believe that it is the right time to conduct a comprehensive literature study that will capture the dominant trends in CRM research field. Identifying CRM's main attributes, as perceived by the authors in the field, can help us to create a cohesive body of knowledge in the field.

For that reason we used two electronic bibliographic databases (ScienceDirect - Elsevier and Springer) and the Google search engine as well. We search for the keywords CRM or Customer relationship management for the period of time from 2000 to 2013 within titles, abstracts or keywords. In order to exclude editorial comments or book reviews the length of papers had to be at least four pages. From this search we ended up with a total pool of 170 journal and conference papers.

The literature study revealed that different authors put emphasis on different aspects of a CRM system. For example, some suggest that it is a tool of marketing [16], [22], [27], [32], [33], [36], [39], [40], [44], [48] for building strong and long term relations with customers, by providing appropriate products and services to meet customers' requirements [47]. Others suggest that a CRM system is a combination of software and hardware solutions to meet businesses requirements. Actually, a number of scholars have identified this belief as an important cause of CRM systems failure [6], [14], [24]. Although the technological aspects of a CRM system are important and definitely made possible the advent of relationship management [25], CRM is much more than a technological tool for customer retention and profit maximization. Below, we present the main features of a CRM

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system by analyzing the definitions provided in 170 journal and conference papers.

TABLE I
CRM MAIN FEATURES

CRM main features	Percentage
1. Better communication	43%
2. Customer acquisition	69%
3. Customer retention	90%
4. Customer loyalty	95%
5. Customer profitability	95%
6. Processes	16%
7. People	22%
8. Provide customized goods and services	75%
9. Maximize customers' lifetime value	90%
10. Marketing effectiveness	69%
11. Responsiveness to market trends	37%
12. Predict future customer needs	58%
13. Integration of relationship technology with loyalty schemes	27%
14. An analytical tool	43%
15. Operations	27%
16. Effective use of information & communication technology	43%
17. Software Application	37%
18. Information Systems strategy	32%
19. Provide consistent service through all customer interaction	53%
20. Increased brand loyalty	64%
21. Efficient and effective customer-focused strategies	48%
22. Knowledge base	22%
23. Data warehousing	32%
24. Data mining	37%
25. Integrated selling, marketing and service strategy	70%
26. Customer-centric IT strategy	32%
27. Decision Support Systems	16%
28. Web-based customer interaction	27%
29. Cost reduction	37%
30. Identifying customer's consumption pattern	32%

From Table I above we draw a number of conclusions about how the scholars of the CRM systems literature perceive what consists indisposable part of such a system. For start, we notice that the focus lies on customer related issues, like customer retention, loyalty and lifetime value. Thus, first and foremost a CRM system focuses on the retention of the existing customers and the maximization of customer profitability by providing customized products and services. Our findings are in line with the well known perception that it is easier and more profitable to keep an existing customer compared to finding a new one. A study suggests that attracting new customers costs five times as much as keeping or managing existing ones [41].

Additionally, the table includes a wide range of tools for extracting useful information from customers' data like analytical tools, data warehousing, data mining, decision support systems [8], [20], [21], [30], [31]. All these tools, help in the process of gathering and processing a huge amount of data and information about customers that will be used for effective communication and delivery of customized products and services [9], [12], [18].

III. CRM RESEARCH FOCUS

As we mentioned earlier, the purpose of our study is to provide an insight into the current state of research in CRM systems in business and to identify potential areas of concern with regard to the implementation of such systems in business.

From our literature study became clear that the majority of the scholars in the field are focusing their attention and research efforts to a number of CRM related research issues, as they appeared in Fig. 1.
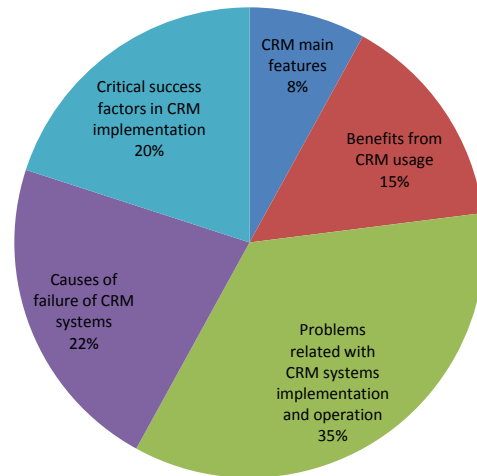

Fig. 1 CRM research focus

We already presented, in Section II, the main features of CRM systems, as these are perceived by the scholars in the field. In the following pages, we will attempt to address the remaining research questions.

IV. FINDINGS ABOUT CRM SYSTEMS IN BUSINESS

A. Benefits from CRM Usage

In the previous pages we presented the most important features of a CRM system according to the findings of the literature review study that was conducted in 170 journal and conference papers. In this section, we present a number of benefits by the use of CRM in an organization, as these have emerged from our literature study.

TABLE II
ADVANTAGES OF USING CRM

Advantages of using CRM	Percentage
1. Reduced marketing and sales cost	75%
2. Identifies customer's consumption pattern	57%
3. Increased customers loyalty to the organization	94%
4. Attracting customers easier	75%
5. Understanding customers needs	75%
6. Increased customer satisfaction	82%
7. Declined customer acquisition costs	69%
8. Customized products and services	82%
9. Individualized marketing strategies	75%
10. Assists in gathering intelligence	88%
11. Reduced cost to serve	69%
12. Improved pricing	44%
13. Increased revenue, profitability	82%
14. Supports product development through database analysis	38%

From Table II above becomes clear that CRM systems' main benefit as it is perceived by the scholars in the field, is the focus on managing the relationship between the business and its

current customers [13] and creating opportunities for expanding its customer base. Therefore, if we want to explain the findings on the table above we would say that a CRM system gathers valuable customer information that is being used for providing individualized marketing strategies for more efficient pricing policy and customized products and services that will increase customer satisfaction and loyalty to the organization [39], [43], [46]. At the same time CRM systems implementation means lower cost for marketing and sales activities. The cost saving in turn boosts company's profitability. Finally, from the analysis of customers' data can be extracted valuable information that is being used for the development of new products and services.

B. Problems Related with CRM Systems Implementation and Operation

Below, Table III provides a list with the most important problems of CRM systems during the implementation and operation phase as they emerged from our literature study. Number one problem appears to be the low success rate in CRM implementation. Despite CRM systems are becoming increasingly popular, some studies suggest that the success rate of CRM implementation is low [37], [14]. Furthermore, according to a number of studies [37], [48], [7] an important number of companies have become increasingly displeased with CRM implementation.

TABLE III
PROBLEMS RELATED WITH CRM SYSTEMS

Problems related with CRM systems	Percentage
1. The success rate of CRM implementation is low	89%
2. CRM is often implemented with a focus on software	59%
3. Some CRM systems do not integrate culture, process, people and technology within and across the organization	59%
4. Unsatisfactory levels of improvement	65%
5. Loyal customers are not necessarily lucrative	42%

The literature study identified as another problem related with CRM the perception that it consists only a technological tool isolated from the culture, people and processes [6], [23], [28] within the organization. Actually, CRM should be looked as a set of business activities supported by technology, people and processes that is designed to increase company's profitability by improving customer relationships.

Unsatisfactory level of business improvement in terms of customer satisfaction and profitability consists of another problematic area in CRM systems implementation. Many times this is the result of underestimation of the cost of implementation of such a system.

Finally, there is a share of scholars who believe that loyal customers are not necessarily lucrative [35]. They suggest that CRM's focus in customer retention is wrong. The proponents of this school of thought insist that should be reassessed the business worthiness of each customer.

Despite the undeniable benefits of CRM systems at theoretical level, applicable results is what the business world asks. The Shortcomings, in CRM systems implementation should be identified and appropriate action to amend them

should be taken if we want to fully benefit from the CRM capabilities. In the next section we will attempt to identify the most common causes of failure in CRM systems implementation.

C. Causes of Failure of CRM Systems

This section attempts to identify the causes behind the low success rate in CRM implementation which according to some studies is even below 30% [37]. According to a number of authors [22], [37], [44] the main cause of failure in CRM systems implementation is because CRM is not integrated into the firm's overall strategy.

TABLE IV
CAUSES OF FAILURE OF CRM SYSTEMS

Causes of failure of CRM systems	Percentage
1. CRM is not integrated into the firm's overall strategy	69%
2. Considering CRM as an exclusively technological tool and not assuming the various organizational & cultural changes it entails	79%
3. Customer data is not accurate and complete	69%
4. Underestimating cost of CRM implementation	58%
5. Companies lack clear business objectives	53%
6. Companies underestimate the complexity of CRM	48%
7. Little understanding of CRM	37%

The most common cause of failure in CRM implementation as Table IV above suggests, is considering CRM as an exclusively technological tool and not assuming the necessary organizational and cultural changes it entails [3], [4], [48]. Another cause of potential failure can be inaccurate or incomplete customer data [42] that can lead to poor decision making. Underestimation of CRM implementation cost can be a serious problem for a business and a cause of failure for a CRM system implementation. Finally, potential cause of failure in CRM implementation can be the lack by the company of clear business objectives or underestimation of the complexity of CRM or limited understanding of CRM.

D. Critical Success Factors in CRM Implementation

In this section, we provide Table V with the critical success factors (CSF) in CRM implementation as they emerged from our literature study. Top management support appears to be the number one CSF [20], [29], [38]. Indeed, no project can progress without the utmost/complete support from a dedicated management team that will supervise and coordinate all aspects of a CRM system's project implementation [47] and will lead the organizational changes required. A CRM system facilitate the relationship of a company with its customers by providing multiple channels of communication, but it is up to the management team to establish a business strategy that will put customer satisfaction as the ultimate objective. Organizational changes may be needed along the way during the integration of a CRM system to the business and revision in company's processes may be necessary too [13], [19], [22], [26]. Management support is a prerequisite for implementing these organizational changes [8], [11], [12], [24].

TABLE V
CRITICAL SUCCESS FACTORS IN CRM IMPLEMENTATION

Critical success factors in CRM implementation	Percentage
1. Top management support	84%
2. Project team competence	78%
3. Project management	78%
4. Vendor support	78%
5. Package selection	67%
6. Creation of a multidisciplinary team	56%
7. Staff commitment	73%
8. Information systems integration	56%

Top management commitment alone is not adequate condition for the successful implementation of a CRM system, middle management and company's employees must embrace the same values for achieving the required organization changes [37], [41], [42], [45]. Finally, through information systems integration we avoid data entry duplications and we achieve better interoperability of the company's various systems, with significant cost saving effect for the organization [18].

The project management of a CRM implementation is another important success factor. The detailed planning and organization of a CRM project will reveal potential problematic areas during and implementation process and will identify possible solutions to those problems [15], [17]. Obviously, a competent project management team is a prerequisite in order the company to succeed to fulfill all the project objectives within the time and budget constraints.

CRM package selection and vendor support are highly ranked in the CSFs list for CRM implementation. Well determined objectives set by the strategic management team make easier the selection of the right CRM package that satisfies company's needs. Also a proven track record in successful CRM systems implementation and after sales support should be taken into account when choosing CRM system vendor.

V. CONCLUSIONS

The purpose of this report is to provide an insight into the current state of research in Customer Relationship Management in Business. To serve this purpose we analysed 170 journal and conference papers according to a number of parameters. We started by identifying CRM's main attributes, as perceived by the authors in the field. Exploring CRM main features will help us to capture the dominant trends in CRM research field and to create a cohesive body of knowledge. Next, we found out that CRM systems' main benefit as it is perceived by the scholars of the relative literature is the focus on managing the relationship between the business and its current customers and creating opportunities for expanding its customer base.

We also found that the number one problem appears to be the low success rate in CRM implementation. Moreover, some studies suggest that an important number of companies have become increasingly displeased with CRM implementation. As another problem related with CRM is the perception that it consists only a technological tool isolated from the culture,

people and processes within the organization. Unsatisfactory level of business improvement in terms of customer satisfaction and profitability consists of another problematic area in CRM systems implementation. On top of everything else, there is a share of scholars who believe that loyal customers are not necessarily lucrative. The proponents of this school of thought insist that should be reassessed the business worthiness of each customer.

Then, we attempted to identify the causes behind the low success rate in CRM implementation which according to some studies is even below 30% [37]. According to a number of authors the main cause of failure in CRM systems implementation is because CRM is not integrated into the firm's overall strategy. CRM is considered as an exclusively technological tool and not assuming the necessary organizational and cultural changes it entails. Another cause of potential failure can be inaccurate or incomplete customer data that can lead to poor decision making. Lack by the company of clear business objectives or underestimation of the complexity of CRM or limited understanding of CRM can also be causes of failure in CRM implementation.

Despite the undeniable benefits of CRM systems at theoretical level, applicable results is what the business world asks. A first step towards this direction would be the amendment of the various implementation and operational problems, connected with CRM projects, as they were identified by our literature study. Another step would be the adoption of the critical success factors (CSF) in CRM implementation as they emerged from our literature study. In particular, top management support, is the number one CSF, followed by project management, package selection and vendor support. Also, middle management and employees must embrace the same values as top management for the successful implementation and operation of a CRM system.

VI. FUTURE RESEARCH

The study provides useful findings and insights about the current state of CRM research field and practice. However, we should keep in mind that the implementation and operation of CRM systems is a dynamic process. We have covered CRM research and practice for over the last decade and up till now. Future research should focus on the analysis of the subject in various industries sectors like hospitality, financial, food, automotive, etc. Such a research will allow us to identify whether or not the problems and challenges in CRM implementation are cross sectional or there are special characteristics in each sector.

We also believe that it will be valuable an empirical research that will be conducted in businesses that operate CRM systems, in order to validate the results from the literature study. Business world perspective on the subject is of utmost importance as CRM systems have a predominantly practical nature and will allow us to extract valuable conclusions.

Finally, it would be interesting to conduct a study about the implementation of CRM systems in central and local government [21], [31]. Such a study would answer questions like: public sector CRM systems face the same challenges like

the private sector systems? How CRM systems can be utilized in order citizens to enjoy the highest quality of public services?

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