Applying EA perspective to CRM: developing a competency framework

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Abstract

Customer Relationship Management (CRM) is getting attention as a business approach for new way of dealing with customer relationships. Although information technology is an important component of CRM, technology itself is not complete as a technology. Literature reports empirical evidences that a very high percentage of CRM projects fail to meet expectations from the business perspective despite the advance of tecnology. In this study, we explore possible causes of failures in CRM projects and use the concept of Enterprise Architecture (EA) in explaining failures. Applying the EA concept, it is argued here that organizational competencies in unstructured decision making are very critical for CRM success. Subsequent case analysis supports the theoretical underpinnings of the argument.

1. CRM

Although Customer Relationship Management (CRM) is an increasingly interesting subject, there is little consensus in the academic literature about the nature and scope of CRM. Authors may emphasise different issues in CRM, for example: technology, people, culture, philosophy, strategy, processes, relationship marketing, etc. Some consider it to be simply a technology implementation, while others view this to be more of a marketing application.

Swift[1, p.12] defines CRM as an "enterprise approach to understanding and influencing customer behaviour through meaningful communications in order to improve customer acquisition, customer retention, customer loyalty, and customer profitability". Zikmund, et al.[2, p.3] argue that CRM "is a process to compile information that increases understanding of how to manage an organization's relationships with its customers". Ryals and Knox[3] state that "the philosophical bases of CRM are a relationship orientation, customer retention and superior customer value created through process management". On the other hand, Peppers and Rogers[4, p.5] point out that "to some executives, customer relationship management is a technology or software solution that helps track data and information about customers to enable better

customer service". Sue and Morin[5] also look at CRM as a technology-enabled business management tool for developing customer knowledge to nurture, maintain, and strengthen profitable relationships.

Kincaid[6, p.41] introduces a more integrated view, defining CRM as "the strategic use of information, processes, technology, and people to manage the customer's relationship with your company (marketing, sales, services, and support) across the whole customer life cycle". Payne[7, p.22] presents a similar perspective saying that CRM is "a strategic approach concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of information technology (IT) and relationship marketing strategies to deliver profitable, long-term relationships".

A CRM project usually include: *operational CRM*, concerned with front-office customer contact, like call-centres and sales force automation systems; *analytical CRM* that involves activities to collect, store, organise and analyse data created by operational CRM in order to improve customer service; *collaborative CRM* related to the use of collaborative services and infrastructure, using multiple channels, to develop interaction between customers, the enterprise and its employees[4, 7]

After looking at the most common definitions of CRM, it is possible to identify three generic views:
- CRM as a *business philosophy*, oriented to the development of a customer-oriented culture, building and cultivating long-term relationships with customers;
- CRM as a *business strategy* that will produce operational plans towards customer retention, and increase sales and profitability;
- CRM as an *IT tool*, emphasising the role of information technology to collect, analyse and use data to create and manage customer relationships.

2. Success factors for CRM

According to IDC forecasts, worldwide sales of CRM applications will increase 8.9% between 2004 and 2008[8, p.39]. However, empirical evidence

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shows that a significant percentage of CRM projects fail. Payne[7, p.20] after analysing reports from Insight Technology Group, The CRM Institute, Giga and Gartner Group concludes that 69% of CRM projects have little impact on sales performance and 70% of CRM initiatives will fail over the following 18 months. Newell[9] states that "only 25 or 30 of companies implementing CRM initiatives feel they are getting the return they expected".

Several authors have tried to explain why CRM projects fail[7,8,9,10,11,12,13]. Most explanations focus on:

• Lack of skills in building and using the new IT based CRM system;

• Inadequate investments, since many projects exceed their budget and miss scope;

• Poor data, especially in enterprises that are in an early stage of CRM adoption;

• Failure of understanding business benefits, since many managers do not completely understand the potential business benefits of the CRM project, especially at the beginning of the project;

• Lack of leadership and top management involvement in the CRM project;

• Inadequate measurement systems, because the organization doesn't know exactly what they want with CRM adoption;

• Cultural problems in adapting the organization to a CRM philosophy;

• Not managing organizational change properly;

• Inadequate methods used to approach the CRM project. They don't satisfactorily integrate and complement the strategic and technological views of CRM;

• Users not involved in the design of the CRM solution;

• Lack of users' skills in using the software;

• Business processes not redefined prior to CRM implementation;

• Lack of software flexibility.

Boulding, et al.[11] discuss the importance of establishing proper information processes and capabilities within the firm, in order to understand the needs and wants of their customers, thus making firms more efficient and effective in managing customer relationships. The capabilities are important not only to understand customers' needs but also to develop in-house collaboration.

For example, share customers' information between different sectors in the organization. Payne[7, p.593] believes that CRM "requires a reorientation of internal systems and the need for systems to support team working – both internal and in collaborative teams with people in other organizations". Ford et al.[14] argue that employees need to perceive the whole organization. The fact that the enterprise must involve and encourage staff training in CRM courses is highlighted by

Chalmeta[13]. The result must be that everybody in the company knows what to do and how to do it. Management and employees must "understand and assimilate the strategic business value of the CRM project" [13, p.1023].

Some questions emerge when we think about human resource capabilities in CRM: Are organizations prepared to manage the new human resource capabilities? How can companies motivate employees to work and develop their capabilities in a CRM context? The literature emphasises that organizations that are trying to obtain a good return on CRM strategy must be able to answer these questions.

3. EA

The concept of Enterprise Architecture has been developed in the academic literature in the last 20 years. John Zachman[15] presented a framework to help the management of information systems projects, which were increasing in size and complexity. He understood that, in order to define and control the interfaces of all the components of an information system, it was important to analyse issues from disciplines quite independent from information systems and technology[15]. The basic idea was to develop an analogy of IS development with building a complex engineering product, for example, in the building industry or airplane industry. Zachman[15] presented 5 views (planner, project owner, designer, builder and sub-contractor) and, initially, 3 dimensions in any engineering project, later extended to 6 dimensions[16]. These dimensions represent: *what* (entities), *how* (activities), *where* (locations), *who* (people), *when* (time) and *why* (ends/means).

The views represent different perspectives on the project, according to the different roles and background of people involved. The dimensions are the different types of issues included in a project. *Entities* are things of interest for the organization, which may include: data, databases, object classes, or business items[17], depending on the view (higher or lower level of abstraction). *Activities* may also be represented at different levels of abstraction, from high level business processes to very low level programming code. *Locations* include places of interest, for example, a building location or network nodes. *People* are individuls involved in business processes at the different levels of the organization. *Time* shows the importance of time in an organization. For example, object-oriented techniques have developed the concept of "business event" that accommodates this dimension (time) more naturally than in Sowa and Zachman's [16] research. *Ends/Means* represent the motivations and reasons why the system is needed. Rules and constraints in systems design are derived from this dimension.

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Sowa and Zachman[16] also introduced a set of rules to use the framework. However, in the 80s it was difficult to manage the framework properly in IS development, since the framework is rather complex, with different levels of abstraction, and the use of computer systems in enterprise architecture was limited. Computer software to implement enterprise architectures were latter developed, although with significant limitations in covering the whole Zachman's views and dimensions - see, for example, [18] and [19].

Sowa and Zachman's framework[16] is a common reference for the development of the concept of enterprise architecture used by other researchers. A wider perspective of IS was further developed, and the concept of Enterprise Architecture emerged, supported on the argument that any enterprise can be seen as an information system - a system that receives, processes, stores and transmits information. Spewak[20] presents a method for enterprise architecture to be used in IS development. Ross et al. [21], and Ross and Beath [22], when referring the concept of Enterprise Architecture, state that they are emphasising the high level logic for business processes and IT capabilities, not only business processes, data, computer applications and technology infrastructure.

3.1 Competencies

The concepts of capability, competence, and resources, have been widely discussed in the management and IS literature, and several definitions can be found[23,24,25,26]. Amit and Schoemaker [24] state that resources are "stocks of available factors that are owned by the firm". Competence is defined as the ability to develop, manage and deploy resources in support of a capability or capabilities and capability the ability of an organization to deliver a product or service into the market place (see 26).

Peppard and Ward [26] argue that IS resources are combined (through structures, processes and roles) at the *organization* level to develop IS competencies and IS competencies can create an IS capability at the enterprise level. According to Peppard and Ward [26], competencies reflect "a bundle of skills and technologies rather than a single, discrete skill or technology", while capabilities are "the strategic application of competencies". Therefore, IS competencies contribute to achieve an IS capability.

According to Bharadwaj[28, p.186] the lack of relationship between IT investments and firm performance may be due to an incomplete understanding of the nature of a firm's IT resources and skills. An enterprise may invest in IT and not be successful in creating an effective IS capability. Ravichandran and Lertwongsatien[29] argue that enterprises will perform better if their IS capabilities support the enterprise core competencies. Their research model has four major components: IT resources, IS capabilities, IT support for core competencies, and firm performance. The empirical data collected supported the argument that IT functional capabilities will contribute to a firm's ability to improve its core competences.

Although, nowadays, enterprise architectures frequently model *IT infrastructure*, *software applications*, *business data*, *business processes*, and *organizational structures*, they usually miss the *competence* dimension. Competencies can be introduced in an enterprise architecture model in two ways: first, the organizational competencies needed to perform business processes according to the objectives of the organization; and, second, the existing competencies inherent to the human resources (individual skills) of the enterprise.

Business processes are a fundamental dimension in Enterprise Architecture. People, technology (software and hardware) and data are important for the organization in the sense that they contribute to improve business processes and align those processes with organizational objectives. People and technology may have an alternative importance to the organization. For example, business processes can be manually performed or completely automated, through the use of information technology. Data is used both in non computerized business processes and in business processes are IT dependent. Mapping the competencies needed to perform a process is important in order to fully understand the business requirements of the process, because some business processes are very difficult to become fully automated (executed without any human intervention). We have also considered that *Time/Why* are requirements inherent to business processes, that will affect its procedures (process rules and details), but that shouldn't be represented at a higher level of abstraction.

3.2 EA and CRM

Enterprise architecture is important to understand how the business operates and how IT is implemented. It is also a significant contribution to any new IT project. It allows us to understand where the organization stands in terms of objectives, business processes, data, technology (software and hardware), human resources and competencies, so that one can better identified what and how it can be changed and improved through the use of IT. A CRM project, especially in a large organization, can be a significantly complex project. It usually involves new business objectives, rethinking business processes, change the culture of the organization ("implementing" a new business philosophy all over the organization), implement new software and hardware tools, develop human resources, improve organizational competencies, and define new data models to incorporate more detailed

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information on customers, products, etc. Furthermore, a CRM project should involve several different departments of the organization (marketing, sales, IT, human resources, top management, etc) with people with different profiles.

A critical variable in the development of a *CRM philosophy* are human resources. Employees must be able to perform the required tasks properly. Achieving this may imply a significant change in the organizational culture and develop a more customer oriented vision for the whole enterprise. When implementing a *CRM strategy* it is also important to change business processes according to the new business requirements. The technological perspective of CRM emphasises the importance of using software applications and computer technology to convert data into useful information for the organization.

The "keyword" in CRM should be "relationship". Enterprises have been managing customers for many years, but not so much thing about establishing "relationships", especially very large organizations with millions of customers. However, managing "relationships" is not an easy task and in order to understand the essence of CRM, it is import to analyse the concept of "relationship". Relation has the meaning of dependence between two things, liaison, friendship, to know each other, intimacy, reciprocity, political, commercial, and cultural mutual interests[30,31,32]. By analysing the different meanings of the term, it is possible to conclude that a relationship implies commitment, duties, mutual understanding and goals.

Ford, et al.[14] claim that a company's relationship with its customers, suppliers, and others, is an asset but also a burden to the organization. For example, it is not easy knowing and gathering personal information about customers. It is not only a process or technology issue, it involves privacy and an ethical dimension[32]. It is intimately related to the concept of symmetry, in the sense of information sharing, which may be difficult for both parties – for the customer to access information about the firm and the firm to access information on the customer. In very simple products (and also services) the customer may not want to establish a relationship with the supplier. He may just want a cheap and relatively good product. The desire to establish a long term relationship does not depend only on the product or service but also on customer experience and values [34].

Gorry and Scott-Morton[35] noticed that managers deal with many unstructured decisions that are difficult to program, hence making the contribution of computers for decision making very limited. In CRM, this is a critical issue, since managing relationships frequently implies making unstructured decisions, that may be difficult to program.

This paper argues that the development of competencies in the organization for unstructured decision making is difficult to program and is a critical issue for CRM success. An organization may have business processes designed to fill CRM requirements, proper software and good information technology, being able to collect a significant volume of relevant data about their customers, but not being able to develop employee competencies on CRM nor establish proper relationships with customers. The next session presents empirical evidence to support this argument.

4. Case Analysis

The enterprise analysed is this study is an European telecommunication company. The firm had been using Siebel and a few other software packages (some developed in-house, prior to the Siebel implementation) for CRM. A new release of Siebel began getting implemented in 2008. Twenty five people of the firm were interviewed, through the use of semi-structured interviews, trying to identify critical issues in CRM adoption. The interviewees include: members of the board of directors, the Chief Information Officer (CIO), the CRM project champion (a top manager of the organization), and several other managers and staff in information technology, sales, marketing, call centre, quality control, process management, and human resources. Two external consultants from a CRM consultancy firm and twenty selected customers were also interviewed to understand suppliers and customer views on the firm's CRM system. The interviews were conducted in 2007 and early 2008.

The interviewees stressed the importance of incorporating CRM in the strategic plan of the firm. The process manager of the organization revelled that there was no integrated strategy on customer relationship management but isolated initiatives in several departments. The alignment among organizational mission, vision, business objectives, technology and CRM concepts are not well defined in the organization. The company is segmented in several departments and each department is basically only worried about achieving its own objectives, and not considering the organization as a whole. For example, the sales department has metrics related to the number of services and products sold per mouth. If a customer complains about a product or service, this department does nothing, because the sales department doesn't reply to complaints.

In the interviews undertaken, managers emphasised the relevance of adequate business processes and the importance of proper software tools. Top management involvement in CRM development, the existence of IS/IT competencies (in-house and outsourced), and the organizational culture of the firm, were also pointed out by many interviewees as critical success factors in CRM

adoption. As one of the managers interviewed stated: "implementing CRM is not only implementing an IT infrastructure. If people are not willing to change the way they work, it will fail".

In the new CRM project, the company is concentrated on the adoption of new information technology, instead of business process redesign. A manager interviewed claims that this situation is wrong and, in relationship marketing, the internal processes must to be simplified. According to this interviewee, rather than appropriate information technology, it is necessary to have adequate organizational processes. The lack of top management involvement in CRM adoption also reflects poor results. Third line managers are sensible to customer relationship needs, trying to start new CRM initiatives to answer the existing problems.

One of the problems the organization is also facing is the fact that the IT perspective of CRM is relatively strong within the company. The IT department is leading most CRM initiatives. However, according to many interviewees in the sales and marketing department, since the selection of the most appropriate software tools and the software configuration process is taking too long, sales people are implementing alternative systems (mainly through Excel) to manage customer data. Despite some managers claim that Siebel is a tool that can help them to manager customer data, the company now has data spread across different technological platforms. The firm is trying to integrate different information systems and knowledge repositories across organizational boundaries (that were developed all over the years) to improve the reliability of customer data and company's relationship with customers.

Employees must be able to work with many different information systems to attend efficiently customer's needs, but frequently the information needed is not available in real time to help the front office to attend customers. However, this is critical to the Call Centre, because the company contracts (and sub-contracts to other firms) many short-term employees to do front office work. These employees, many times, do not receive any adequate training and move between jobs very often. The situation becomes worst since people in the Call Centre are rewarded if they attend many customers (which also mean spending less time attending customer's calls).

Because people in the call centre may not have the best skills to reply to customers calls, the firm tries to implement standard procedures to assure a basic quality level in the call centre. However, some questions asked by customers are difficult to predict and customers are frequently dissatisfied with the information provided.

There are significant opportunities for improvement of CRM practices in the organization. For example, one customer reported that she received a phone call around 9 PM from an employee of the firm suggesting a new service and when she complained that 9 PM was too late to call, the employee argued that she was working until 10 PM and insisted on selling the new service. After suggesting that she should not be contacted again for similar proposes, she received a new call next day, about the same new service the firm was trying to sell. Then, the customer complained that she had been contacted before and was not interested. However, the employee of the telecommunication company insisted that it wasn't true, because the computer system had no record saying that customer had been contacted before, which made the customer unpleased with the situation.

Although the enterprise heavily invests in CRM software and hardware and implemented pre-defined and tested business processes for CRM, it doesn't pay enough attention to the competencies needed to implement a proper CRM solution. Since many CRM tasks require unstructured decision making and relationship skills, although the firm has adequate software and hardware tools, it hasn't been able to develop rewarding relationships with its customers.

5. Conclusion

Many companies, nowadays, try to develop a customer centric organization and look at CRM to improve their performance. In this paper, we look at the concept of Enterprise Architecture to try to understand how companies can improve their CRM adoption projects.

We consider that companies can obtain a true relationship with a customer if they develop three dimensions of CRM: a CRM philosophy, a CRM strategy and CRM technology. The philosophical dimension leads company's values and allows a customer-oriented culture keen on building and cultivating long-term relationships with customers. CRM strategy drives functional plans and actions towards building relationships with customers. CRM technology focus on the role of IT being used to collect, analyse, and use data to create and manage relationships with customers.

An enterprise may strongly investment in IT for CRM adoption and not be successful in creating an effective "relationship" capability. This is because it is necessary to analyse the company's competencies on customer relationship, independently from its information technology capabilities. Competencies are important in two ways: (1) they form the basis for performing business processes related to CRM, and (2) they help in firming relationship with customers.

CRM is about relationships, involving the development of competencies in the organization for unstructured decision making. The main contribution of this paper is in stressing human resource skills and organizational competencies as a key factor for CRM

adoption. We have also proposed a new meta-model of enterprise architecture including competencies.

In this case study presented, although the company's mission, vision and objectives focus on customers, they do not appear in the strategic plans of the company. The way the company deals with its customers doesn't adequately reflect the emphasis on relationship that it wants to establish with customers. Company's values related to a CRM are not clear to the employees either, resulting in poor customer relationship management.

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