

The Impact of Information Technologies on Customer Relationships Management

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Abstract

Over the past few years there has been a strong technological evolution in the field of information and communication with a significant impact on management. Companies are investing huge amounts in relationship technologies, leading to new forms of interaction. On the other hand, the incorporation of activities of the value chain in integrated IT is likely to affect the network of relationships established, especially with strategic business partners. Focusing on business-to-business relationships, this paper has a twofold objective. Firstly, to understand the management of customer relationships in contexts where IT tend to assume an important role. Secondly, to analyse to what extent the new information technologies are likely to be a potential source of value for companies. And, if so, what are their advantages and limitations. These are relevant issues, both from a theoretical and practical point of view since they reflect a current trend whose understanding is critical to firms' performance in the medium and long run. The research followed a qualitative methodological approach that focused on PostLog EMS, a firm that operates in the courier sector. In scientific terms, the paper attempts to contribute to a better understanding of relationships with customers intermediated by information technologies. In this context, the main contribution stems from its interdisciplinary character since it establishes a close link between two fields of research: marketing and information systems.

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INTRODUCTION

The recent evolution in information technology has caused deep changes, both in terms of relationships management as well as in the way companies operate, leading to changes in the role played by marketing, particularly with regards to customer relationship management. Relationships and information technology are interdependent issues. This paper is the result of an investigation carried out at the University of Porto, and aims to analyse the impact of information technologies on the value of customer relationships. The first two sections address customer relationship management, in particular supported by information technologies. The third section describes and gives foundation to the methodology used in the investigation. There follows the model for analysis and the description of the case studied. The sixth section summarises the main contributions of this research project. The paper ends with a set of both scientific and managerial conclusions.

CUSTOMER RELATIONSHIP MANAGEMENT

The value of a customer represents depends on both costs and benefits, present and future, inherent to the relationship held with him. In concrete terms, this is difficult to know. As Ravald and Grönroos (1996) and Gordon (1998) put it, this is because its nature can vary from relationship to relationship as well as in relation to the same customer during the lifetime of a relationship (Ford *et al.*, 1998; Barnes and Cumby, 1999). Thus, at an operational level, evaluating the value of a customer consists in estimating and comparing the revenue received through a customer with the cost of serving him (Shapiro *et al.*, 1987; Turnbull and Zolkiewski, 1997).

Costs and Benefits

According to Barnes and Cumby (1999), the evaluation of the value of a customer demands a deep analysis, using a five-stage procedure through which all the relevant costs and benefits (both monetary and non-monetary) are duly considered and analysed (Figure 1). In terms of costs associated with maintaining a customer relationship, direct costs are relative to direct work expenses, while the costs of managing the relationship involve various costs such as training, compensation, motivation, and expenses related to the quality of the service, amongst others.

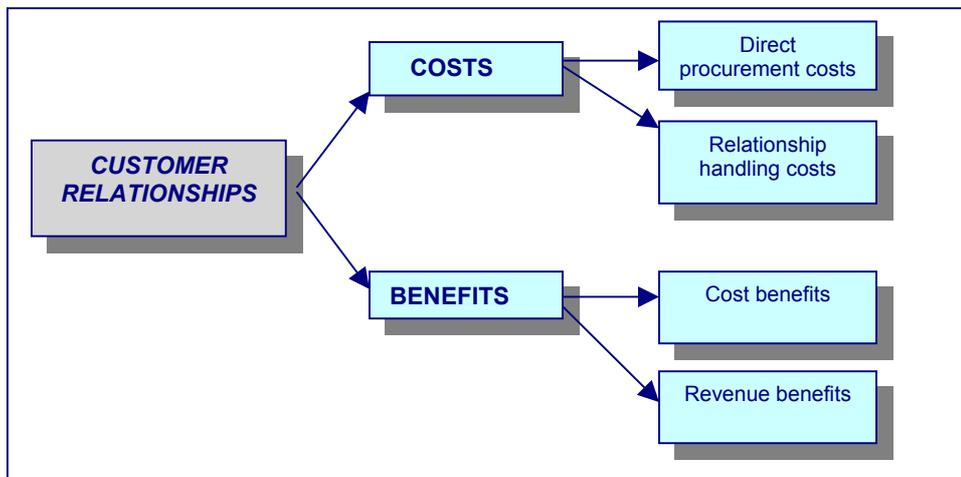


Figure 1 — Costs and benefits of customer relations

Source: Ford, 1998, p. 113

But when a company considers the establishment of a relationship with a specific customer it has in mind the fulfilment of benefits, which may also be direct or indirect (Hakansson and Johanson, 1993; Anderson, Hakansson and Johanson, 1994). The relationship with a customer encompasses a perceived value for the supplier, made up of a number of benefits or functions (Ryssel, Ritter and Gemünden, 2000). The functions of direct or primary value are benefits that result from the actual relationship. The functions of indirect or secondary value are benefits that result from the impact in the future or on other relationships.

These functions are likely to create value to the supplier through the involvement in medium and long termed relationships with its customers (Möller, 2000). All these functions may be interlinked and are dynamic: while the direct functions can be carried out in the core of an isolated relationship, the indirect functions are the result of a network action (Mandják and Durrieu, 2000). Another important benefit that may result from the relationship has to do with customer loyalty, a critical issue in relationship marketing (Costabile, 2000). Loyalty arises as a result of the degree of customer satisfaction that leads to a strengthening of ties and consequently lengthening of relationships (Ravald and Grönroos, 1996).

Authors such as Gattorna and Walters (1996) or Rexeisen and Sauter (1997) have also contributed to possible ways of evaluating the value of a customer. However, they offer a

narrow perspective inasmuch as they focus only on more tangible aspects of the relationships. In 1999, Baxter and Matear, approached the concept in an innovative way defending that the buyer-seller relationship should be treated as “intellectual capital”, but highlighted the lack of agreement relative to how this “intellectual capital” can be precisely estimated.

Value components

Notwithstanding the costs and benefits inherent to customer relationships pointed out by Barnes and Cumby (1999) and by Ryssel, Ritter and Gemünden (2000), the value of the customer is made up of two parts: the present value and strategic value. The present value of a customer or their lifetime value (LTV) is estimated on the basis of the expected return – i.e., it corresponds to the flow of future profits of a customer discounted until the present. Gordon (1998) defines the LTV of a potential customer as “a projection of the expenses with the customer minus the costs of the company in producing the product (well-known), customer service and support (not so well known to the companies)”. New information technologies allow the calculation of LTV and compare them. This calculation certainly reveals itself to be essential to the launching of loyalty programs, since the high investment associated to them leads to the company needing to know exactly which customers have a LTV that justifies such a program.

On the other hand, the strategic value of a customer corresponds to the potential that a customer brings in the long term to the company, i.e., the maximum potential of the customer that the company can obtain through developing a relationship with him. This increase may occur if the company gains a larger share of the customers from competitors, resulting from customers changing their behaviour or because the customer sees that his needs have increased. To determine the strategic value, the company must develop an interactive approach through which the customer transmits the specifications of his needs, referring to what type of product and service they want, when and why.

ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT

Inherent to this relational perspective is the capacity of the company to interact with its customers, present or potential, in order to gather relevant data. The analysis of this data may result in the establishment of a one-to-one approach encompassing a customised offer of

products and services, adapted to the specific needs and expectations of each customer. When a firm deals with a large number of customers, this is only possible through the integration of information technology that allows a real time interaction and the consequent analysis of the data collected.

It is here that Customer Relationship Management (CRM) systems arise which, in final analysis and according to its designation, intends to manage customer relationships. This approach, already known beforehand, now integrates technologies that allow the execution of certain complementary functions in the process (Ferrão, 1998): to analyse and improve the relationship with the customer through better understanding of how the relationship works; dividing the customers through a deeper knowledge of behaviour and purchase patterns; preparing and defining a marketing plan, based on the information gathered and treated.

In fact, the origin of the expression CRM is not of an electronic nature, being applied to the management of customer relationships long before contemplating the possibility of integrating IT. This is perceivable in definitions presented by numerous academics. Computer companies have adulterated the expression by adopting it to designate the technological perspective of relationship management. Today, it is almost impossible to dissociate CRM from the electronic side (Dyché, 2002, Swift, 2001). This is the reason why it is this electronic notion of CRM that will be adopted during this dissertation. Thus, according to Galbreath (1998, p. 15), “the CRM integrates marketing, sales and services functions through the automation of the business process, technological solutions and information resources, in order to maximise each contact with the customer. The CRM facilitates the relationships between companies, customers, service suppliers and workers.” The definition given by this author clearly shows that CRM is made up of two components (Brito and Ramos, 2000; Dyché, 2002): marketing and information systems.

The marketing component results from the fact that CRM aim is not only the acquisition of new customers but also the maintenance of present customers in a profitable way. On the other hand, the technological component, as it is based on the efficient use of information systems, allows greater validity and speed in taking decisions, implying a greater number of staff to contact customers or related to the field of information, a larger number of sales and marketing functions, and the existence of managers with a more informative and complete system relative to their present and potential customers (Swift, 2001). The CRM system

provides the technological means that allow the relationship marketing philosophy to be put into practice, where it is not enough for a company to just integrate technology into its processes. Only through the reorganisation of a company around its customer can the strategy yield effects (Thompson *et al.*, 2000).

From the definitions presented, it is possible to outline a CRM model that contains four interdependent stages which if executed allows the policy of individualised marketing to be put into practice: the knowledge of the customers, their choice, sales and loyalty. In brief, these stages consist in the knowledge of the customers through the understanding of the markets as well as the customers, by differentiating them through the development of offer, the sale of customised products that lead to the acquisition of customers, and finally, the rendering of services that lead to their loyalty or maintenance. Associated to each of these stages exist a series of technological tools that allow for their fulfilment.

This problem constitutes the central research question in this investigation: to understand the reason why information technology is likely to create value both for buyers and sellers. Besides trying to understand this, it is intended that the nature of the value created be specified, i.e., to know the type of costs and benefits that are affected by having introduced information technology in relationship management.

METHODOLOGY

There are various possible methodologies to carry out an empirical investigation. It depends on the nature of the research questions, the extent of the control of the researcher over behavioural events and the degree of focus of the investigation on contemporary events as opposed to historic events. Associated to each methodology are a series of advantages, disadvantages and provisos that condition their applicability.

According to Yin (1994, p. 1) “in general, the case study constitutes a preferred strategy when placing questions such as “Why” or “How”, when a researcher exerts little control over the events and when the focus falls upon a contemporary phenomenon at the heart of real life. Such explicative case studies can be complemented with two other types – exploratory and descriptive case studies”. On the other hand, case studies “arise from the desire to understand

complex social phenomenon”, which allows, “the maintaining of the significant characteristics of real life events” (Yin, 1994, p. 3).

The case study adopted in this investigation is simultaneously explicative and exploratory. It is possible to state that it is explicative, as it intends to understand the cause-effect type relationships, explaining the causes that produce the effects. On the other hand, it is exploratory since as it intends to simultaneously define the questions and hypothesis of future studies, as well as determining up to what point are the procedures, applied to this analysis, viable (Yin, 1993). Up to this date few are the papers that look at the phenomenon that is to be analysed (Ryssel, Ritter and Gemünden, 2000). For the reasons presented, a case study analysis methodology was adopted with a single case design. The case studied was PostLog EMS.

As what it is intended is the analysis of the impact of IT on the management of relationships with customers, it seems pertinent to analyse this case as it directly portrays this reality. In practice, and in line with Easton (1995, p. 480), “the majority of studies, on industrial networks, adopted, conscientiously or unconscientiously, a case study approach”. This is because this methodology captures the complexity of the interaction processes, seen between the players and the different aspects that condition them. Besides this, it permits the investigation of individual or group responses to the changes (Westgren and Zering, 1998).

THE FRAMEWORK FOR ANALYSIS

The framework for analysis encompasses five interrelated dimensions that stem from the literature review:

- . Communication and information technologies
- . Value of relationships
- . Relationship management strategies
- . Atmosphere of a relationship
- . Uncertainties.

The first two dimensions (IT and the value of relationships) constitute the basis of the conceptual model. The other dimensions constitute a filter for the basic analysis, as they

make up the conditionings for it. The five dimensions and their respective interlinks give rise to the model presented in Figure 2.

This is the model that was used for the empirical study. The figure makes clear not only the key question which lies in the interlink between IT and the creation of value of a relationship, but also the filter dimensions that underlie any buyer-seller relationship.

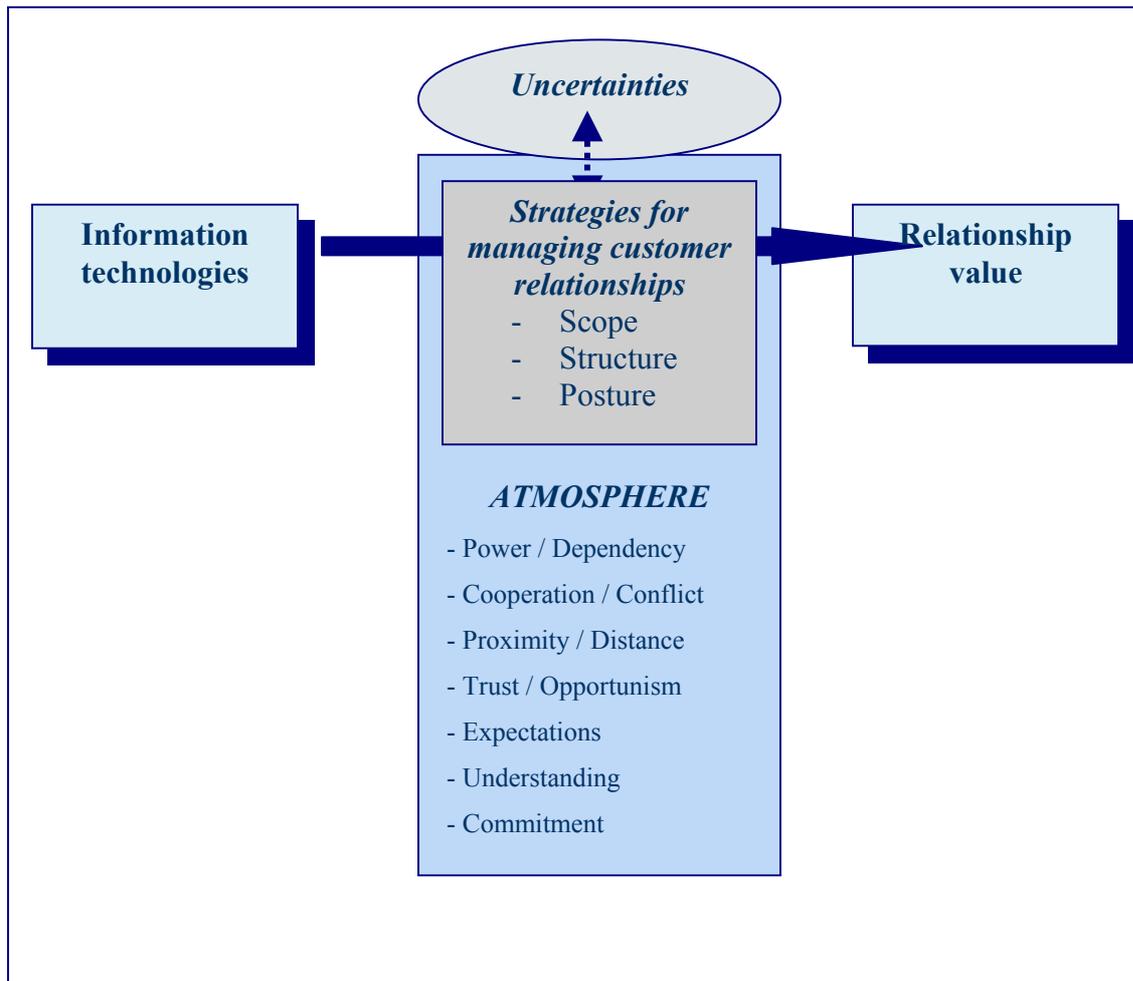


Figure 2 — The framework for analysis

POSTLOG EMS

Overview

PostLog EMS is a Portuguese company specialised in courier services. It has around 500 employees and processes approximately seven million parcels per year, which corresponds to a volume sale of more than one million euros. It offers an integrated range of services, from logistics and stock management to post-sale service, as well as a dynamic and flexible distribution service. The weight of the parcel is fundamental to determining the limit of activity. Being considered the largest courier company set up in Portugal, it was created in 2000 as a unit of the CTT Group (the Portuguese post office company).

The courier sector is very attractive, with a strong growth rate, greater than that of the national economy. The companies that operate on this sector suffer the influence of three major forces: customers, competitors and new information systems. These forces condition and reinforce the need to provide value to customers. The companies that operate in this market are aware that they can only reinforce customer loyalty by increasing the value of the products and services they offer.

Eighty percent of PostLog EMS sales volume is to large companies, while private customers or small and medium companies represent the other twenty percent. The customers are also classified according to the services they use, being either occasional or contractual. The customers are classified as occasional when their parcels are sporadic and in small quantities. The customers are classified as contractual when their parcels are regular and in large quantities, therefore benefiting from certain advantages. These customers are attributed a card, in order to associate a number to their despatches. According to the director of marketing at PostLog EMS, the company is attempting not only to reinforce loyalty from the contractual customer but the loyalty of the occasional customers.

After an order made by the customer, PostLog EMS begins the operational channels to give an adequate response. PostLog EMS not only counts on hundreds of CTT offices in Portugal where customers can go to request a specific service, but it also has available for customers of a certain size, a home pick up service. Besides the operational head-office in Lisbon, PostLog EMS has around sixteen operational centres that collect and distribute the traffic of customer's parcels. Over the border, the company has various collection centres in strategic points that allow it to act on the international market. Sometimes, the transport and delivery of parcels is subcontracted to other companies that also act within the business of postal delivery using the express mail system.

Over the past few years, there has been an intensification of the technological component, which revolutionised the principles of the running and management of advanced information systems. If a company does not present the ability to follow such technological evolution it may not succeed in a very competitive market.

The Implementation of a CRM System at PostLog EMS

One of the most important success critical factors is the time of delivery. PostLog EMS offers a portfolio of products with different delivery patterns and, when defining the standard for a parcel and a specific customer, a guaranteed delivery is what is intended. Placing the customer at the centre of the relationship is considered a way of gaining customers loyalty. Thus, it is particularly important to analyse and improve customer relationships. In this context, PostLog EMS decided to introduce some technological changes. This project led to PostLog EMS investing around 500,000 euros in 2001, but according to the company's director of marketing "it is worth knowing how much a satisfied customer is worth rather than talking in abstract".

The project was developed with the support of a multi-departmental team made up of company staff and experts from IT companies such as SAP Portugal, Altitude and Erickson. This system was implemented in nine weeks, a very short period of time. The company implemented the *mySap.com CRM* in order to improve its knowledge about the customers, to identify opportunities for cross *selling* and up *selling*, and to improve the interfaces between the customers and the back-office.

MySap.com CRM constitutes a tool for accompanying the interactions with the customers at various phases of the relationship cycle, presenting a series of functionalities. PostLog EMS integrated two functional areas of this tool: CIC – Customer Interaction Centre both at the front-office (financial, sales force and customer service, with a total of 8 helpdesks) and at the back-office (customer service with a total of 8 helpdesks), and a telesales system for the smaller customers.

With the implementation of these two functionalities, the company began to reap the benefits, such as the existence of a single customer record, keeping a customer contact history, the

creation of specialised front-offices for the financial and sales areas, the production of a database to support sales and marketing campaigns.

MAIN CONTRIBUTIONS OF THE RESEARCH

The analysis of the semi-structured interviews carried out with both the company's staff (located in the front-office as well as in the back-office) and customers, it was possible to conclude that:

Value creation

As regards the creation of value, it was seen, that if the company has high costs resulting from the large investment carried out in acquiring and implementing the technology (includes the direct cost of the tool, the cost of education, training and motivation of the staff and also the cost of the educational campaign on customers), then the perception prevails that the general cost, relative to customer relationship management and providing services to customers, decreases. In relation to the benefits, as regards the direct value functions of volume and profit and the indirect value functions of "scout" and market, by maximising the use of the telesales function then the functions of innovation and access can soon be achieved. However, the great benefit that results from using the CRM, resides in the possibility of obtaining customer loyalty. It is possible then to declare that CRM leads to the creation of value relative to relationship management, where this creation is measured by the increase in the perceived value, both for the customers and the company.

Relationship strategies

Also in terms of relationship strategies, it was verified that CRM produced effects. Regarding the purchase structure, a rise was seen in the number of customers that contacted or were contacted by the company, as well as more contacts per customer being more frequent. Relative to its attitude, PostLog EMS adopted different strategies depending on the size of the customer and, even for customers of the same size, different approaches were taken depending on whether it was a sale or complaint: contrary to what happened with the complaints, more personalised contacts were seen in sales situations. Finally, the reach of the relationships was affected only in terms of the offer content as no change was seen to the

extent of the offer. The customers saw an increase in the content offered by PostLog, as they had a better notion of the activity developed by it, due to the rise in process and market technology of the company.

The atmosphere of the relationship

The impact of CRM on the seven analysis measures that allows the classification of said relationship atmosphere, was also analysed, verifying an increase in the level of interdependency, a rise in the power that the clients have over the company, more determination for cooperation between parties, eventual conflicts are resolved more easily (resulting overall in better communication between the parties), an increase in the distance in certain areas, although in global terms they are closer. Also seen was an increase in customer confidence leading to a rise in the demand for answers and expectations produced. Also verified was a total lack of perception of opportunities or actions for their own benefit, an increase in the degree of understanding how the company works (which leads to a quicker resolution to eventual conflicts and higher performance expectation) and, finally, a strong commitment to and the good will of all parties to continue the relationships which leads to loyalty. Through seeing the impacts provoked by the implementation of CRM on the variables that allow relationship atmospheres to be classified, it is possible to state that it improved.

Uncertainties

In relation to the uncertainties, the company saw a greater ease for customers to communicate the theory of their uncertainties to PostLog EMS, as well as a greater speed and capacity to resolve them. The improved ability to resolve problems can be seen in all eventual types of uncertainties, leading to greater confidence and a more beneficial atmosphere.

CONCLUSION

By means of a deep analysis of the PostLog EMS case, it is possible to verify that the application of relationship technologies to the management of interaction with customers leads to the creation of value for the intervening parties. The various types of value created by the use of CRM were duly analysed and understood. Also analysed were the consequences

of this use on the strategies and relationship atmosphere and on the reduction of customer uncertainties. This reduction can be interpreted as a way of creation of value (for the customer that sees his problems resolved and for the supplier that, while creating customer satisfaction, obtain their loyalty).

In scientific terms, the investigation carried out contributed to a deepening of the knowledge in the field of communication and information technology applied to relationship management, contributing also to a more exact understanding of the actual concept of value creation relative to that management. On the other hand, the creation of value has been the target of various studies during recent years, but rarely under the perspective of integrating CIT. Although a significant increase has been seen, by the companies, in investing in information technology, few are the investigations whose aim are to analyse the effects that these technologies provoke on the nature of the relationships. Our opinion is that the main strength of the study carried out lies in its interdisciplinary character that results from the bridge established between marketing and some technological questions, which, as already mentioned, is an area which is scarcely analysed.

Organisations may also benefit from this paper. Taking into account the fact that CRM technology is a relatively recent concept on the Portuguese business market, it is natural that companies show some reluctance in applying this tool to their procedures. Although the suppliers of the solutions in this field always present a series of advantages for the companies, which may result from the integration of this technology, it remains to be known if these benefits are merely a commercial argument that has no basis on reality. With this paper, organisations have access to an impartial and valid investigation of the scientific point of view. Finally, relative to the technological dynamics that have been seen in the corporate environment, it seems pertinent to deepen this question, as it reflects the business trends, the knowledge and understanding of which is practically obligatory for any organisation who wishes to ensure a sustained position on the market.

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