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CRM SYSTEM IMPLEMENTATION AND CUSTOMER PORTFOLIO ANALYSIS IN MICRO B2B COMPANIES: THE CASE OF ANTROX

Tutor: Prof. Gian Luca Gregori

Ph.D: student: Marco Pierantonelli

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Introduction

This thesis concerns the theme of Customer Relationship Management (CRM) in a business-to-business context. More specifically this thesis regards my experience with the setting up and implementation of a cloud CRM system in a micro Italian industrial company, operating in the lighting market, named Antrox.

Every company relies on business relationships. According to Ford et al. (2011), business relationships are the most important asset for an industrial company. The theoretical framework adopted is the one developed by the IMP Group (Industrial Marketing and Purchasing Group) about business-to-business relationships. This group of researchers focuses on the study of buyer-seller relationships in B2B settings. They found out that business relationships in industrial contexts become interdependent on each other by means of repeat transactions. They present a high degree of stability, with few important clients accounting for a large share of the company's sales. Industrial relationships are usually complex and require frequent buyer-seller interactions and mutual adaptations. Those relationships are not only important in monetary terms, but also for their intangible value. Monetary aspects of relationships can be easily evaluated. On the contrary, the intangible features are more difficult to assess, but they are as important as the tangible aspects, as they may be strategically significant. I take the supplier's point of view, and the value that relationships bring to seller. As noted by Walter et al. (2001) business relationships may conduct different functions for the selling company. Direct functions concern activities and resources that create value to the supplier without being dependent upon other relationships. Differently, indirect functions capture connected effects in other relationships of the wider network. Both kinds of functions emerged in the Customer Portfolio Analysis conducted for Antrox and had important implications for the implementation of the CRM system.

Industrial companies should manage carefully each relationship, starting, developing, maintaining and recovering business relationships with clients, distributors, suppliers, investors, competitors and any other actor of the surrounding environment. Nevertheless too often firms do not put enough efforts in these activities. The reason could be traced in scarce resources (financial or human) or in a poor understanding of the benefits of having stable and fruitful business relationships. Especially small and micro companies lack structured mechanisms of relationship management, as this is usually extemporary and based on the intuitions and experiences of top management.

There is no standard CRM strategy for every firm: each company is different and the management of relationships should be tailored accordingly to the organization's characteristics, business model, environment and strategic goals. Furthermore, under the IMP framework, CRM is a resource, that does not produce effect in isolation, but needs to be linked with other resources, both social and technical ones. In this thesis CRM is seen as a device that interacts with actors who insert data into it to acquire processed information appropriate to manage customer relationships. Other company's resources (such as IT elements, business relationships, employees and information) constantly interact with the CRM system, thus influencing the value it can generate.

CRM systems allow the company to collect valuable information about the customer base. Developing structured mechanisms and processes to manage each group of relationships, leads to the creation of customer knowledge and represent an input for the company's strategic actions. Furthermore, CRM systems improve customer satisfaction, facilitating the provision of personalized services or products and strengthening relationships with important clients.

A Customer Portfolio Analysis (CPA) can help the company in setting up a CRM system coherent with the firm's strategic goals and consistent with the peculiarities of the customer base. Each company's set of technological and human resources is limited; the final goal of a CPA is to improve the resource allocation between different groups of customers, focusing on important ones and developing specific strategies.

This research had two main purposes: to shed light on the process of CRM system implementation in a micro industrial company and to examine the effects of the introduction of that system into the company. The features of business relationships in industrial contexts will be presented under the IMP approach. After illustrating the concepts of Customer Portfolio Analysis and CRM, my collaboration with Antrox, which is the company object of this study, will be described. The company has been selected because it is representative of the Italian context of micro industrial enterprises who try to develop structured mechanism to manage customer relationships, whereas in the past their management was extemporary and based on the intuitions of the general manager. This company is facing a hard competition, especially abroad, and its revenues are decreasing. Although business relationships are of vital importance for Antrox, the firm lacks a structured way to manage them and does not have a clear picture of the different contributions of each relationship. A cloud CRM system has been implemented, based on the results of a tailored Customer Portfolio Analysis, with the final goal of finding variables that would express the different value that each group of customers brings to the firm. Successively, the specific CRM strategies that were designed for each group of relationships will be presented. Then, the conclusions with contributions and final considerations.

Chapter 1: Industrial market context

1.1 Business relationships in industrial settings.

The companies that operate in industrial markets, or business-to-business markets purchase goods and services to be used in the production of other goods and services that are sold, rented or supplied to other companies (Giacomazzi, 2002). The main characteristics of B2B markets concern the nature and complexity of industrial products and services, the nature and variety of industrial demand, the limited number of clients, the bigger volumes of sales per client and the strict and long lasting relationships between buyers and suppliers (Gnecchi, 2009). Kotler (2007) propose a list of the main peculiarities of industrial markets:

- The presence of few, big, important clients. As the client base is made of a limited number of organizations that are very important to the selling company, and with a strong negotiating power, very often the buyers expect the selling company to personalize its offer in order to satisfy their specific requirements. In this way, strict relationships establish between buyers and sellers. The industrial company has to develop relationships also with the divisions, departments, groups and individual employees of the client company, trying to influence decision makers and other important actors.

- Industrial goods are purchased by professional buyers that follow their company's guidelines. Quotes, proposals and contracts are typical purchasing tools of B2B markets. Often clients have complex requirements.
- Strong focus in retaining existing clients. Very often the selling company does not look for clients for their products, but for products for their clients.
- It is necessary a deep knowledge of the goods sold. Exchanged products are typically complex, so the selling company has to "teach" to the buyers how to use the product or service. The selling company has to communicate efficiently the product's features and points of strength.
- Products and services exchanged are often expensive, so the purchase cycle is long lasting and there may be inactive moments between purchases. As purchases are sporadic, the selling company has to try constantly to maintain the relationship active, selling services or proposing new contracts.

The offer communication is delicate and the supplier must be able to transfer the intrinsic value of the offer into the customer's perceived value. Communication may regard the company as a whole or the single product and may be generically addressed to the market or to a specific relationship.

Every customer has specific requirements and needs; therefore, suppliers often have to customize their offering. However, the level of customization required by the client may vary: sometimes customers ask for a little degree of adaptability compared to the standard version; in other cases, they request relevant modifications. Mintzberg et al. (2003) defined a continuum of five strategies, that ranges from pure standardization to pure customization. Pure standardization occurs when the same product is sold to all customers. In segmented standardization, companies offer a more wide range of solutions to different groups of customers. In customized standardization, the customization affects only the assembling, without influencing fabrication. Tailored customization occurs when companies show to the client a prototype, which will be developed and adapted according to customer's requirements. With pure customization, every step in product development is adapted for the client. It affects design, fabrication, assembly and distribution. Buyer and supplier work together sharing knowledge and influencing each other.

Companies in industrial markets place differently among the supply chain, that goes from raw materials suppliers to final product manufacturers. Every component of the chain is at the same time supplier and buyer, but the logic is not always linear, so there can be several end markets for the same company, thus making marketing strategies more complex. Furthermore, industrial markets are characterized by derived demand;

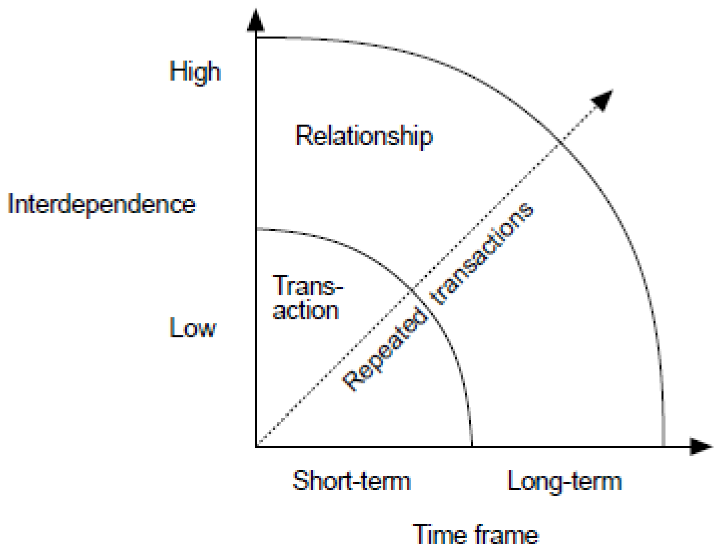
therefore, the marketing strategy has to focus not only on the direct client, but also on the client of the client and on the final user.

Industrial markets are bigger in dimension compared to consumer markets and are more complex, due to the high number of actors involved and on the complexity of purchasing mechanisms and contracts (Giacomazzi, 2002).

1.2 The IMP approach on business relationships.

In this research, the Industrial Marketing and Purchasing (IMP) Group perspective about business-to-business relationships is adopted. In 1976 the IMP Group started as a joint research project of researchers from the University of Uppsala, the University of Bath, the University of Manchester Institute of Science and Technology, the École Supérieure de Commerce, and the Ludwig Maximilian University of Munich. By empirically studying how firms interact with each other in industrial contexts, IMP researchers have developed significant theoretical tools for the analysis of B2B markets in opposition to traditional marketing assumptions, which focused their attention on the single transaction between a firm and its client. On the contrary, IMP researchers focused on the long-term relationship with the customer. The shifting was from the management of the product lifecycle to the management of the customer lifecycle.

They found out that industrial markets were characterized by some peculiarities: there is a high degree of stability in the relationships between buyers and sellers and very often cooperative behaviors between buyers and sellers take place, with frequent adaptations of products and services. For a majority of companies in business markets, a small number of suppliers and customers are individually responsible for large volumes of their purchases or sales. The parties continuously look for the satisfaction of the counterpart. To investigate more deeply these complex phenomena IMP researchers decided to shed light on the dependences that occurred between buyers and sellers during the relationship development. In order to gather deep knowledge of the customer during every phase of the relationship, they developed the "Interaction Approach" (Turnbull and Cunningham, 1981; Håkansson, 1982) which is based on some assumptions: purchases in industrial markets are not individual events and cannot be examined in isolation. It's not simply a process of action by the seller and reaction by the buyer, but industrial markets are characterized by relationships in which buying and selling companies continuously interact with each other. As transactions repeat over time, through interaction episodes companies become interdependent on each other.



Source: Juttner and Wehrli, 1994.

Industrial markets are very often characterized by long term, close and complex relationships in which companies are interdependent on each other and need to be analyzed according to this peculiarity. For IMP researchers the unit of analysis must be the relationship itself and not the single companies forming the relationship.

The specific market of a company can be considered as a network. Within a specific market, the sum of interdependences and interactions that connect the companies among them constitute the network. Companies engage in business relationships in order to exploit their resources and in order to acquire a “network position” (Ford et al., 1996). A network position is a specific kind of resource, which consists of the firm’s relationships and the rights and obligations which go with them (Henders, 1992). The interdependences developed within their most important relationships, define a company's position in a network of other relationships. As stated by Ford et al.: (2011: 10) *"A network position consists of its set of relationships and the benefits, restrictions, obligations and reputation that it has acquired through its unique interactions with those relationships. Each company's network position is affected by changes in those around it. The position is not solely the result of a company's strategy"*. To investigate deeply a company's network position, the unit of analysis must be the company's relationship portfolio and the resources that have been built through interactions. A company's strategy concern the management of each relationship, both individually and as part of an interrelated portfolio (Turnbull and Valla, 1986).

Business relationship evolve during various stages. According to Ford (1980), they typically move into four stages: the pre-relationship stage; the exploratory stage; the developing stage and the stable stage. In the pre-relationship stage the parties screen each other in order to understand if a relationship may be convenient. Previous experiences, uncertainty and distance may affect the evaluation of the counterpart. During the exploratory stage the parties start to collaborate and mutual knowledge arise. The developing stage is characterized by an increasing experience between the organizations and a reduced degree of uncertainty. At this stage, much of company's evaluation of the counterpart will depend on perceptions of their commitment to the relationship development. Commitment may be demonstrated through several ways, such as efforts to reduce social distance or adaptations in order to meet the needs of the other organization. During the stable stage mutual trust and commitment are taken for granted and the companies recognize mutual importance to each other. Uncertainty and social distance are reduced to a minimum; experience is well consolidated and leads to the establishment of standard operating procedures.

Wilson (1995) uses a different categorization; in his model, the stages are: partner selection, defining purpose, setting of relationship boundaries, creating relationship value and relationship maintenance. Dwayer et al. (1987) formulated a four-step model; the stages are awareness, exploration, expansion and commitment. Larson (1992) proposed a three-step classification characterized by: pre-conditions defining, building conditions specifying, integration and control. Levinger (1980) projected a five-step model: initial attraction, relationship building, continuation, deterioration and ending. It is important to underline that not all relationships move into each of these stages in a predetermined manner. Many fail to develop after an initial contact, others are short-lived, and others will last for decades. Some relationships unexpectedly may recover after their interruption. Nevertheless, the management of a business relationship is not a linear process, where the parties can move consciously towards an ideal state. As stated by Ford et al. (2011: 30): “managing relationships assets is about coping with different circumstances at different times with varying aims, expectations and ways of dealing with each other by both companies, some of which will be constructive and some of which will only damage the relationship”. Ford (1980) suggest that business relationships must be analyzed taking into account the relationship experiences, uncertainties, distances (cultural, social, geographical and technical), level of commitment and degree of adaptation between the parties.

Business relationships may also become a source of problems for the parties involved. Håkansson and Snehota (1995) found five factors that can affect negatively business relationships:

- Loss of control. Being part of a relationships may imply losing some degree of control over some activities and resources that are shared with the other company
- Uncertainty of the future. The future of a business relationship is difficult to forecast as several factors, internal and external, may influence its outcome
- Resource demanding. Business relationships require investments and mutual adaptations. It may be very costly to move apart from strict relationships

- The preclusion of others. Being part of a relationship precludes other relationships, which may be incompatible with the current relationship
- Stickiness. Being in a strict relationship also means getting closer to other relationships connected with the partner. This may present both advantages and disadvantages

Biong et al. (1997) proposed a list of factors explaining why companies may prefer not to engage in business relationships. First, an organization may be fearful of becoming dependent on the counterpart and of eventual opportunistic behaviors. Another reason is the conviction that the benefits coming from the relationship won't surpass the necessary investments. Also if the partner does not seems to possess the necessary credibility in terms of skills, motivation and technological competence, an organization may decide not to engage in a relationship. Other factors are the lack of relational orientation from the partner and the speed of technological changes, that may affect the willingness to sustain significant investments to have access to technologies that may become obsolete in a short period.

Håkansson and Johanson (1992) developed the so called ARA model, which explains the dynamics of business interaction. According to their model, the outcome of business interactions can be described in terms of three layers: Actor bonds, Activity links and Resource ties between the counterparts. The actor layer refers to the interpersonal links developed between individuals through interactions: the degree to which the actors see and trust each other and the level of mutual commitment. Actor bonds also allow mutual learning about opportunities and solutions. The activity layer relates to the level of coordination and integration of activities that may develop between actors. The resource layer involves the degree to which the resources of the two actors mutually adapt and tie together. The resource layer concern both tangible resources (i.e. machineries) and intangible resources (i.e. knowledge). As the resources of the two companies tie together, they may develop greater efficiency in usage. The three layers may produce consequences beyond the specific relationship in which they arise; indeed they may affect also the surrounding network.

Even if the relationship is between two actors, the environment in which the interaction takes place affects the relationship. When analyzing business relationship also the wider context must be considered. The interaction process between two companies creates, as a result, a specific atmosphere which can be considered as an output itself of the relationship. The atmosphere depends on different variables, such as the power-dependence that an organization plays on another, the cooperation between the organizations, and the overall closeness or distance of the relationship.

As the relationship develops, the parties forming the relationship sustain some investments; therefore business-to-business marketing can be seen as a process of investments in market positions (Turnbull and Wilson, 1989). As stated by Terho and Halinen (2007: 9): *"the more complex the relationships are, and the more there are adaptations, relationship specific investments, and social exchange between exchange parties the more interdependent the parties become too. Thus the switching of partner is more difficult, and there are few alternatives to the existing relationships in more complex exchange context*".

In order to better allocate the company's resources within a portfolio of relationships, it is necessary to analyze the current and projected benefits that are likely to result from each relationship (Ford, 1980). Usually a small subgroup of a relationship is central to the success of a specific company (Ford et al., 2011). Current and projected profits of customers, both existing and potential, should be forecasted at least at market segment level, if an individual analysis is not feasible. The company's management should also identify the stage of each customer relationship, in order to better understand the potential of the customer base, with the final goal of improving the firm' strategic planning and maximizing long term profitability.

The presence of personal contacts between individuals, groups and hierarchical levels in organizations is very important for the formation and management of customer relationships. Personal contacts allow information exchanges and the creation of social bonds and mutual adaptation between the parties; also cultural, technical and social distances may decrease. Customer interfaces and human resources have to be effectively managed both internally and externally, with the final goal of satisfying the different customer typologies. Indeed as stated by Ford (1984: 13) *"the customers' attitudes to different suppliers is not conditioned simply by narrowly defined product or service attributes or by customer assessment of the technical or commercial competence of a supplier, but also through the pattern and characteristics of the interaction with those suppliers. The achievement of a capability to compete on the basis of these interaction skills is a crucial ingredient of competitiveness. This is assessed by customers within their relationships with suppliers through the processes of interaction".*

1.3 Customer Portfolio Analysis in industrial markets.

The management of customer relationships is a critical factor in business-to-business contexts. Very often, the complexity of those relationships makes it impossible for a company to apply the same management strategies to all its customers. Indeed, some customers have particular requirements, others may be more costly to serve and some produce more revenues than others do.

The management of each relationship requires great efforts, but the technical and human resources of a company are limited. The concept of portfolio analysis allows the optimal allocation of a firm's resources between its customers. As stated by Turnbull (1990: 7): *"...portfolio types of analysis can be a useful management tool for enforcing a discipline in the allocation of suppliers limited resources to an optimal combination of customers".* The portfolio analysis consent to a company to select and focus on strategically important customers and segments.

It origins from financial theory, but it was later applied in product planning, supply chain management and business strategy (Cunningham, 1986; Turnbull, 1990).

The first conceptualization of portfolio theory concerned the management of equity investments (Markowitz, 1952). His work focused on the problem of the selection of an optimal portfolio of shares, concluding that a diversified portfolio was to be preferred to a non-diversified one. During the 70's, with the proliferation of big multinational companies, operating in several markets with a high degree of complexity, portfolio models were used as strategic tools to manage this heterogeneity

(Wind and Mahajan, 1981). Portfolio models were used to address issues concerning business units (Hedley, 1977), product lines (Day, 1977), corporate structure (Hofer and Schendel, 1978) and internationalization (Wind and Douglas, 1981). Some models included objective information, whereas others suggested the use of subjective information; some argued that the same model could be applied to any company, others remarked the need for tailoring the criteria to the company's needs, paying attention to the external context.

The first studies concerning Customer Portfolio Management dates from the early 80's with Fiocca (1982) and Campbell and Cunningham (1984). Fiocca (1982) found out how about the 80% of an industrial company's revenues came from only the 20% of its customers. Thus, it is necessary to gather deep customer knowledge (purchasing history, product usage, complaints…) in order to formulate management strategies that maximize the relationship potential with an efficient use of the firm's resources. The goal is double: the creation of value for each group of customers and profit maximization for the firm. The author highlighted some factors useful to assess the strategic importance of the client and its management difficulties. The factors were both objective and subjective: he considered the product characteristics, the relationship duration, the value and volume of transactions, the potential prestige of the client, the cooperation and trust level between buyer and supplier. The profits related to each client were calculated subtracting both direct and indirect costs to the customer's revenues. Campbell and Cunningham (1984) proposed a three-step model for customer portfolio analysis. The first step focus on relationship nature and appeal, putting on one axe the customer lifecycle phases and on the other several factors like sales volumes, use of strategic resources, relationship duration, share of firm's profits. The second step focus on the client and on the analysis of its performances. The final step concerns the selection of key customers, considering their growth rate and their competitive positioning. Shapiro et al. (1987) proposed another classification considering clients as profit centers. Three variables are used to determine the profit dispersion between customers: cost to serve, customer behavior and customer management. These are compared with pre-sale costs, production costs, distribution costs, post-sale costs. Correlating all these with the sale price, it is possible to determine different types of customers: passive, carriage trade, bargain basement and aggressive. They argue that profitability will vary between the groups and propose practices to manage this profit dispersion. Krapfel et al. (1991) propose a model in which they analyze relationship types and relationship management methods to find the optimal relationship portfolio. For what concern relationship types they distinguish between partner, friend, acquaintance and rival; these typologies are determined by relationship value and by the commonality between the firm's economic goals and the perception of the partner's goals. For what concerns the relationship management methods they identify several typologies: collaboration, negotiation, administration, domination, accommodation and submission. Turnbull and Zolkiewski (1997) conclude that the customers of any firm can be segmented using a three-dimension analysis considering client costs, net price and relationship value. The biggest difficulty in the application of these models is that most of this data are hard to evaluate and / or to find. Furthermore, an individual analysis is more feasible for companies with few relationships, whereas it could be very costly and complicated for companies that have to deal with many relationships.

All the models differ substantially and it is difficult to find a general comprehensive definition of Customer Portfolio Management. Johnson and Selnes (2004: 15) define it as: *"a process of creating value across a company's customer relationships, from arm's length transactions to strategic partnerships, with an emphasis of balancing closer relationships with weaker ones".* Terho and Halinen (2007: 2) provide one of the most comprehensive definition of Customer Portfolio Management: *"a practice by which a company analyzes the role of different customers in providing current and future value in its customer base for developing a balanced customer structure through effective resource allocation to different customers or customer groups".*

The criteria used in the majority of portfolio models can be grouped into four broad classes (Terho, 2008):

- the customer's current or future value potential for the focal company;
- customer relationship variables;
- power related variables;
- buying behavior variables.

Value is often evaluated only from the company's point of view, neglecting the value created for the customer. According to Baxter and Matear (2004), value can be distinguished into tangible value (monetary) or intangible value (skills and competences at individual or organizational level). Wilson and Jantrania (1997) propose another classification: they distinguish between economic value, strategic value and behavioral value. Economic value refers to cost reductions in product engineering, in design, in assembly, in field service. Economic value may also reduce the time to market. Strategic value refers to the possibility of co-creating value in a long-term relationship, if there is goal congruence, strategic fit and competence between the parties. Behavioral value involves trust, cultural and social bonds that may occur in long-term relationships.

Walter et al. (2001) distinguish between direct and indirect value functions of customer relationships. Direct value functions concern volume, profit and safeguarding, whereas indirect value is about innovation, market referencing, scouting and accessing. Direct value may be referred only to a specific relationship; on the other side indirect value involves also the partners, as each relationship is directly or indirectly connected to other relationships.

For what concern customer relationship variables, the state and nature of a relationship may be useful for portfolio analysis, because they influence the relationship development trajectories. They involve variables like friendship, strength, competition, length, managerial distance (Fiocca, 1982); age, life-cycle (Campbell and Cunningham, 1984); goals, interest commonality (Krapfel et al., 1991); information exchange, cooperation, institutionalization, commitment, trust (Pels, 1992); perceived relationship strength (Yorke and Droussiotis, 1994); competition, mutuality, goal similarity (Freytag and Mols, 2001); relationship risk (Ryals, 2003).

For what concern power related variables, even if they are not directly connected with customer value, they influence the relationship development. For instance, a company which is heavily dependent on few relationships is very vulnerable, whereas spreading the risk on several low value relationships may guarantee continuity. Examples of these variables are customer relative share (Dickson, 1983); power (Fiocca 1982); criticality, replaceability and slack (Krapfel et al. 1991; Turnbull and Zolkiewski, 1997).

Finally, some authors consider buying behavior variables into their models. This class of variables if very important for customer portfolio analysis, as it involves directly the way customers are treated. Examples include customer requirements (Canning, 1982); price sensitivity (Shapiro et al. 1987); claims and payment problems (Yorke and Droussiotis, 1994); predictability (Dhar and Glazzer, 2003).

As relationship development is not a straightforward, one-sided linear process, but it is the result of the interactions that take place between the parties, the relationship portfolio cannot be just selected but it has to be developed over time in interaction with the customers (Hunt, 1997).

1.4 Value creation and exchange in business relationships.

Nevertheless, the final quest of a customer portfolio analysis is the assessment of the value of the relationships. In industrial markets, this value cannot be expressed purely on monetary terms, as other aspects are of primary importance. Every relationship may have a different role in the portfolio and may provide different value to the focal company. Considering customer portfolio analysis just as a maximization of the lifetime value of single customers means restricting its potential. According to Terho (2008) portfolio management concentrates on the role of different customers in providing long-term value to the company, rather than just on optimizing profits from individual accounts.

The concept of value was traditionally related to the price paid for a transaction (Vargo et al., 2006). Only since the 80's emerged the idea that value was created in social settings through interactions; the concept shifted from something related to physical production processes, to a more fluid, relational and intangible conceptualization (Sheth and Parvatiyar, 2000; Håkansson and Wootz, 1979). The unit of analysis shifted from firms and products to organizations, people, and relationships.

Walter et al. (2001: 366) defined value as *"the perceived tradeoff between benefits and sacrifices gained through a customer relationship by key decision makers in the supplier's organization. Those benefits and sacrifices can result from the relationship under question as well as from connected relationships on which the focal relationship has an impact or is effected by those other relationships"*. Other authors broadened the concept to include non-monetary aspects, such as social position, market rewards and competence (Wilson, 1995).

The resource-based view provides a theoretical framework to examine the concept of value. Any company is made of a specific combination of resources (Penrose, 1959); the capability to create a competitive advantage relies in the use of these resources, leading to the creation of customer value.

In literature, a lot of attention has been dedicated to customer value, relying on the assumption that the success of any firm depends on its ability to provide more value to its customers than its competitors. The non-monetary value that customers bring to the selling company was rather neglected. Nevertheless, customers may become a source of competitive advantage, as they do not limit their utility to the provision of revenues, but conduct several functions to the selling company (Walter et al., 2001). The authors distinguish between direct and indirect functions. Direct functions are those who create an immediate effect on the selling company, without being dependent upon other relationships. On the other side, indirect functions have an oblique effect on the selling company as they *"capture connected effects in other relationships. Connected means the extent to which exchange in one relation is contingent upon exchange (or non-exchange) in the other relation. Thus, indirect functions are important because they positively impact on exchange in other relationships"* (Walter et al., 2001: 368). Examples of direct functions are: profit function, volume function, safeguard function. The profit function allows the seller to have profitable customer relationships. The volume function allows the selling company to sell an adequate volume of products / services, in order to benefit from economies of scale and to make discounts on high volumes to increase customer retention. Certain, reliable customers conduct a safeguard function as they act as a life vest for the firm's business, when other customers don't fulfill the selling agreements or where there are high market uncertainties. Examples of indirect functions are innovation development, market function, scout function, access function. The innovation and development function takes place when the customer or its products possess a high technological level. The selling companies may prefer to have this kind of customers to benefit from such expertise. When the customer facilitate the entering of the supplier in new markets, thanks to referral and recommendations, we speak about market function. The scout function takes place when the customer provides the supplier important sensible information about the marketplace. When the customer has significant experience in dealing with authorities, banks or trade associations, he may help the supplier in reducing time of negotiations and facilitating business procedures; in this case he conducts an access function. Direct and indirect functions are both important for the supplier, and he may decide to sacrifice little shares of profits in order to obtain the benefits of indirect functions.

Not only customers, but also producers, suppliers and other actors contribute to the value creation process in complex and non-linear ways, through the combining of resources and interaction episodes (Vargo and Lusch, 2004). The process is mutually conducted by the parties and involves both tangible and intangible resources. The company's management should be able to assess the value that each relationship brings to the organization. The tangible aspects of value can be assessed through a customer profitability analysis. On the contrary, the intangible features are more difficult to evaluate, but are as important as the tangible aspects, as it is the intangibility, and thus the inimitability of relationships, that make them important (Morgan and Hunt, 1999). The authors developed a categorization of the resources that a supplier can access from the relationship with the buyer. The tangible resources concern both financial and physical resources. Human, organizational, relational and informational resources on the contrary concerns intangible aspects. Human capital resources include competences, skills and attitudes. Organizational resources include databases, manuals, management styles, patents, brands and trademarks. Relational resources involve the access of the seller to the buyer's network of relationships. Informational resources involve the knowledge that the seller may access thanks to the relationship with the buyer.

The fact that buyer seller relationships provide value is supported both by the IMP Group (Håkansson and Snehota, 1982) and by the relationship marketing literature. As stated by Gronroos (1994: 9): *"relationship marketing is to identify and establish, maintain and enhance and when necessary also to terminate relationships with customers and other stakeholders, at a profit, so that the objectives of all parties are met, and that this is done by mutual exchange and fulfillment of promises".*

In business-to-business settings, the value creation can be found in all those processes in which an interaction between the parties is required, such as suppliers contributing to buyer's internal processes (Payne et al., 2008). As the relationship develops, the parties interact with each other and learn from each other, contributing to the establishment of meanings of value and creating interdependences for the activities and resources of each organization. According to Wilson (1995) a relationship can provide value to the parties, especially when some conditions are met, such as: the presence of non-retrievable investments, the establishment of mutual goals, adaptations to processes and products, strengthening of structural bonds, cooperation and commitment between the parties. Thus, the network of relationships of a company is important to create inimitable value generating resources (Gulati et al., 2000).

Customer portfolio models may result in different managerial implications. According to Turnbull (1990) in the end all the models deals with resource allocation. Similarly Yorke and Droussuitis (1994) stress the importance of a cost-efficient resource allocation. On the contrary, Krapfel et al. (1991) conclude the main managerial implication of customer portfolio analysis concerns the way to interact with the different groups of customers; Dickson (1983) suggests that different trading tactics should be applied to different customers; for Shapiro et al. (1987) the company should differentiate pricing and service levels among different customers. For Zolkiewski and Turnbull (2002) customer portfolio management should focus more on the firm long-term effectiveness and should not be limited to a short-term efficient use of resources. The authors conclude that Customer Portfolio Management should be about understanding which relationship to develop and in which direction, if there is a need for the establishment of new relationships and if some relationship should be interrupted.

Chapter 2: Customer Relationship Management

2.1 Different perspectives on CRM.

Knowledge can be considered as the most important strategic resource of a company and the capability to acquire, integrate, store and use it, as the most important capability to build and sustain a competitive advantage (Zack, 1999). The creation of a shared and integrated knowledge base about customers is the starting point for the development of a successful CRM system. The capability to acquire and use client data, upon direct request, or deducing from its behavior, constitutes a competitive advantage. The info gathered could be regarded as a fundamental asset for the company's strategy.

CRM is an acronym for Customer Relationship Management; however, the borders of the object of its analysis and its impact on the firm, at various levels, are not shared at all, among practitioners and academics as well. In the business world, it may be merely associated with the concept of a software that helps the management of sales activities, whereas in the academic literature we can find several, different, and more exhaustive conceptualization of CRM (Zablah et al., 2004). Even though the lacking of a common view on the subject, CRM still represent a relevant topic, both for practitioners (firm's investment on CRM are substantial [Rigby et al., 2002]) and academics (the high failure rates of CRM projects [Mendoza et al., 2007] together with its seemingly limitless potentiality, make it a stimulating research stream). Furthermore, it is a topic whose relevance could encompass most, if not all, firm's business areas and therefore, to be effectively managed, it requires an integrated, cross-functional approach (Payne and Frow, 2005).

During the first decades of the XX century, most firms produced standardized products for the masses: the focus was on productivity and distribution; later on, marketing emerged as a discipline, studying the behavior of consumers, developing marketing systems and designing marketing mix. In the next decades, it became more difficult to sell products and more adaptations to customer requirements were needed. Therefore, the focus moved on customers, and on how to maintain long lasting relationship with them: the central object of marketing studies shifted from transactions to relationships (Kotler and Keller, 2006).

The idea of a "customer centric company" origins from Levitt (1960); the author evidences the risk for the company to focus too much on products, omitting customers and their real necessities. Potential clients are not interested in buying a product, but in satisfying an inner need. Losing sight on customers and needs, companies may not exploit several market opportunities and may have a too narrow view about the competitive environment. Companies should instead understand their customers, investing on retention programs and trying to comprehend the reasons behind customer defections.

Another contribution to creation of a customer centric culture was brought by Carlzon (1991). He putted the client at the top of all the company's hierarchies, with all functions and departments at his service. It is indeed the client who leads the company's decisions, providing fundamental information about which products to develop.

Kotler and Keller (2006) emphasized the need for customer orientation in marketing, because if the company knows their customers, it would better know what to offer, in which ways and at which price. Kotler modified the traditional 4P's of the marketing mix to the 4C's:

- Product – Customer Value (value for the client);
- Price – Customer Cost (cost for the client);
- Point of Sale – Customer Convenience (accessibility for the client);
- Promotion – Customer Communication (communication to the client).

In recent years, some factors have contributed to the growth and circulation of CRM systems. First of all, the development of IT allowed companies to increase their marketing efforts, decreasing costs. Another influencing factor has been the Total Quality Movement, in which suppliers and customers are involved together in improving the quality of the product. CRM diffusion has also been boosted by the hyper-competition era we are living, where customer satisfaction and loyalty are key success factors and where it's less costly to retain customers than to attract new ones. Furthermore, loyal customers are more inclined to up-sell and cross-sell. It is undoubted that, nowadays, customer tastes and expectations change continuously; for this reason CRM is a useful tool to keep track of their perceptions (Parvatiyar and Sheth, 2001). Finally, companies transited from a product-centric, towards a customer-centric culture (Homburg et al., 2000; Ehret, 2004). Considering all these factors, it is easy to see the current relevance of CRM as a topic of study.

CRM systems can be useful in both, business-to-consumer and business-to-business settings. However, the differences taking place in these two types of markets have an impact on several critical factors concerning the management of customer relationships. First of all, B2B markets usually involve bigger and more relevant purchases than B2C contexts; it is more common for B2B buyers to repeat purchases regularly, with the same seller; finally B2B interactions are more complex, multi-step, time consuming and relationally oriented, and, therefore, they request the best possible pre and after-sale service and assistance. In a B2B context, during the interactions between buyers and sellers, it is frequent to have adaptions, for instance on product characteristics that better fit buyer's industrial equipment. In B2B markets, the more relevant information, are those that give insights about what future strategies should be taken and how to anticipate customer's trajectories of development. Trust, commitment and satisfaction are central elements of the relationship. For these reasons, firms operating in B2B markets may benefit more from higher depth of service and exchange efficiency, deriving from the adoption of a CRM system. Furthermore, it is easier to up-sell and cross-sell to B2B buyers, as the CRM could be used to increase path-dependencies and raise switching costs. Finally, and most importantly, B2B buyers are more difficult to replace, than B2C buyers are; therefore, maximum attention has to be put in all those activities that may increase customer satisfaction and reduce defection (Saini et al., 2009).

Zablah et al. (2004) made a literature review on the topic and found approximately 45 distinct definitions of CRM, relating to five major perspectives; CRM as: a process, a strategy, a philosophy, a capability, a technological tool. The process view consider it as a macro-process, that includes all the activities regarding the development and maintenance of customer relationships. The strategy view highlights its potential in tracking and segmenting different customers, and thus its importance is directly related to the possibility of applying the best, profit-maximizing strategy for each customer. The philosophy view affirm that customer loyalty can only be reached with a continuous effort on the relationship, thus every company should spend great efforts in understanding and satisfying customer needs through CRM systems. The capability perspective stress the idea that the successful management of customer relationships requires a firm capable of leveraging a certain mix of its internal resources to adapt and to respond continuously to customer needs. Finally, the technology view, focuses primarily on the importance of the technological aspects of CRM, to effectively manage the interactions across all the different touch-points with the customer.

The META Group (2001) distinct between operational, collaborative and analytical CRM. Operational CRM concerns sales, marketing and service automation. Collaborative CRM is about supporting operational CRM through the use of IT. Finally, analytical CRM provides analysis of customer data and behavioral patterns to improve business decisions.

Bose (2002: 89) stress the importance of the technological factor, defining CRM as *"an enterprise-wide integration of technologies working together, such as data warehouse, Web site, intranet/extranet, phone support system, accounting, sales, marketing and production".* Differently, Parvatiyar and Sheth (2001: 5) underline the importance of value creation, as they define CRM as the *"comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for the company and customers"*. Similarly Mendoza (2007: 915) define

CRM as *"a strategic process, human factor and technology that produces the best relationship with customers to intensify value, satisfaction and customer loyalty"*.

One of the most cited and comprehensive definitions of CRM, is the one of Payne and Frow (2005: 168): *"CRM is a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of relationship marketing strategies and IT to create profitable, long-term relationships with customers and other key stakeholders. 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."*

In B2B settings, where each relationship is delicate and needs to be managed specifically, CRM is particularly useful to maximize the value that each customer brings to the firm. Kumar and Reinartz (2012: 261) define B2B CRM as: *"the strategic process of strengthening relationships with business customers, especially important clients, beyond transactional relationships to better manage the value of these buyer-seller relationships"*.

Setting up a CRM system involves a four step process (Peppers D., Rogers M., 2001):

- Customer Identification
- Customer Segmentation according to their needs and to the value that they provide to the company
- Interaction with Customers in effective and efficient ways
- Offer Customization. When possible, customize some aspects of products and services according to client requirements, using the customer knowledge gained through interactions.

2.2 Theoretical framework: CRM as resource.

The theoretical framework of this thesis relies on the conceptualization of the Industrial Marketing and Purchasing Group (IMP). This research stream, focused on the study of buyer-seller relationships in B2B markets, consider CRM as a socio-technical resource. CRM is simply a resource to be combined with others, such as other IT tools, individuals and organizational units. Furthermore, the value and contribution of CRM will depend on those resource combinations (Baraldi, 2005). Resources do not produce effects in isolation, but need to be connected with other resources, both social and technical ones. CRM is seen as a device that interacts with actors who insert data into it to acquire processed information appropriate to manage customer relationships. Thus, a CRM system always interacts with other company's resources, such as information, people, business relationships and other IT systems.

The Resource-Based View (RBV) (Wernerfelt, 1984; Barney, 1991; Grant, 1991) consider resources as a source of competitive advantage, especially if they are rare, valuable, not imitable and not substitutable. Anyway, the RBV considers resources in isolation and does not allow to capture the dynamics of resource interactions, as the value deriving from the combination of a resource with other ones.

On the contrary, IMP researchers rely on the contribution of Penrose (1959) and his conceptualization of resource heterogeneity. According to the author, the economic value of resources does not depend so much on their uniqueness or scarcity, but on the interaction process in which they take part. The value of a resource manifest itself after the combining with other resources, both at intra-organizational and inter-organizational level. Indeed no company control all the resources that it needs (Araujo et al. 1999); for this reasons companies interact with other organization in order to have access to other resources (for instance competences or machineries).

In a B2B context, CRM needs to embrace the complexity of relationships as well as the interdependences between actors, activities and resources; the emerging result in unpredictable a priori (Perna and Baraldi, 2014).

The 4Rs resource-interaction model (Håkansson and Waluszewski, 2002; Baraldi et al., 2012) affirms that no single company possess all the resources it needs to achieve its goals, but every company is dependent on other counterparts providing them. In the model there are 4 kind of resources: products, facilities, business units and business relationships; CRM is considered a facility that elaborates data to generate digital information. Within this model, after a resource has been categorized, it is possible to analyze the interactions between them, and the degree to which different resources affect each other. The 4R's model is particularly useful to analyze the embedding of a new resource in existing structures (Baraldi et al. 2011) and the changes occurring at organizational and technical level and their economic consequences. Furthermore, the 4R's model allows analyzing how resources change over time, as they are not static elements. It relies on the concept of resources interfaces, which are *"concerned with the technical and organizational interdependences that arise when the resource bases of buyer and supplier are connected through exchange activities"* (Araujo et al., 1999: 499). The effects of the introduction and implementation of a CRM system are indeed investigated within the resource interface concept, which enables the understanding of the complex mechanisms by which several other resources, both technical / physical and social / organizational, need to be combined around the CRM system in order to allow it to produce its effects. (Baraldi and Waluszewski, 2005). The use of a CRM system, involves interactions between technical and social resources, like individual users, organizations and other IT components, making the CRM embedded in a network structure. CRM cannot be considered as an independent tool that produces its effects by its own, but it is more like a facility dependent on other resources to generate some results and create value.

The IMP perspective on CRM is innovative for considering how this resource interaction phenomenon takes place, not only between the resources of the single firm, but also between the resources of other firms of the network and the single firm's resources.

2.3 CRM's impact on organizations.

Although, as we see, there's no common and shared conceptualization of CRM in the literature, it's undoubted that a good management of this tool can bring several advantages to the management of a firm.

It can support marketing activities (Grant and Schlesinger, 1995), thanks to the execution of specific internal processes, that will provide deep customer knowledge (Campbell, 2003). Effectively managed, it can help companies in segmenting customers referring to their value and in formulating specific strategies for each cluster or even for each individual customer (Kim et al., 2006). The desired result is the creation of value for both the customer and the seller (Parvatiyar and Sheth, 2001; Boulding et al., 2005), thus improving customer satisfaction, retention, up-selling and cross-selling opportunities (Speier and Venkatesh, 2002; Steel et al., 2013).

This strategic use of information, could become a source of competitive advantage (Xu et al., 2002). Focusing on the long term, an effective CRM will be mutually beneficial for both customers and suppliers (Mithas et al., 2005), decreasing customer service costs, improving customer service and facilitating a fully personalized service (Berkley and Gupta, 1994).

CRM can also help companies in planning, tracking and measuring their marketing efforts; this continuous interaction between customers and suppliers could result in the provision of customized products to the market (Rigby et al., 2002).

CRM systems are a very useful tool to gather information about the market and external changes and, if effectively managed, allow the adaption of the firm’s internal culture and processes to those changes. Therefore, CRM systems are an integral part of the so-called learning organization, which is always conscious and responsive towards the surrounding environment (Stein and Smith, 2008).

Organizational learning is made of three components: organizational values, organizational actions and market information processing. CRM is at the core of the latter component, enabling information generation, dissemination, interpretation and memory; it is capable of influencing the degree to which an organization make changes in its marketing strategies (Sinkula et al., 1997).

CRM systems allow the codification of knowledge; this is particularly relevant in industrial settings: if a key account manager, which has been dealing for years with the same customer, decide to leave the company, all the relevant information about that customer, his transactions history, preferences and specificities, could be lost. This translation of implicit, into explicit knowledge, is what Nonaka (1991) aims for the knowledge-creating company.

One relevant issue is to determine the effects of CRM, through appropriate KPIs. Traditional quantitative measures of CRM are sales, acquisition and retention rates, cost reduction and service time, whereas qualitative measures, suggest various behavioral elements such as attitude to serve, understanding of expectations, customer satisfaction, loyalty and quality perceptions (Kim and Kim, 2008).

In the literature, results are mixed: for instance, Stein and Smith (2008) found a positive association, in B2B markets, between CRM use and firm performance in terms of profitability, sales force productivity, customer retention, average account sales and average account gross margins. In addition, Rodriguez and Honeycutt (2011) found positive association between CRM utilization and sales performances, sales effectiveness and collaboration, in B2B markets. At the opposite, Hendricks (2006) found no direct correlation between the implementation of a CRM system and profitability measures.

It is improper to affirm that CRM will boost sales and profits in every company adopting it; any CRM evaluation has to be multi-dimensional and organization-specific, due to the complexity and variety of the consequences of its application. For Kim and Kim (2008), a solution could be the creation of a CRM scorecard, categorizing CRM effects into four different perspectives: organizational perspective (including shareholder value and profitability); customer perspective (including customer equity, loyalty, satisfaction and value); process perspective (including customer acquisition, retention and expansion); infrastructure perspective (including IT, human capital, organizational and culture components). Anyway, as we take the IMP perspective, thus referring to a B2B context, it is not possible to evaluate the effects of CRM use, only by analyzing that specific resource, but we should look at all the interactions that take place between CRM and other resources, within and outside the company. It is a more complex approach, it requires a long period of analysis and it has to be tailored to each firm and network's peculiarities.

2.4 Critical factors for CRM success.

Building and implementing a successful CRM system is neither an easy nor automatic process. Indeed a large percentage of organizations do not recognize any substantial improvement in the way they sell and serve customers, after a CRM system has been set up (Mendoza, 2007; Steel et al., 2013). This led to a certain kind of unease towards CRM, similar to the disillusionment towards the use of IT to automate business activities, during the late 80's (Jayachandran et al., 2005).

Too many organizations commit certain mistakes when approaching CRM; some implement the system without having an adequate customer strategy; others install a CRM technology before creating a customer-focused organization; a common peril is to think that, in every situation, the more technology, the better; another frequent mistake if over-interacting with customers after the tool's installation (Rigby et al., 2002).

Obviously, a reason for CRM failures, could be found in technological or data quality issues (Reid and Catterall, 2005; Alshawi et al., 2011), but very often it has to do with organizational change and disruption, organizational resistance, poor support from top management (Finnegan and Currie, 2010), end user acceptance (Zablah et al., 2004), overreliance on technology as a surrogate for strategic planning, inordinate focus on improving operational efficiency rather than centering on strategic goals (Saini et al., 2009), or simply misconception of the tool (Mendoza et al., 2007).

Another important aspect is data integration, as the information may come from different sources. Therefore, the company must integrate all the data gathered through all the touch points with the client (phone, mail, email, website…) avoiding fragmentations, duplications and redundancies. Data should also be always updated, but not all the customer information have the same importance to the company. As the process of data updating may be costly and time and resource consuming, the company should determine which information should be immediately updated and which could be brought up-to-date on a regular basis. Another trade-off is between the volume of data to gather and the capability to manage and analyze those data. Indeed too often companies collect huge amounts of data, without having the necessary resources to analyze them. In this way, the company sustain CRM costs, without obtaining benefices.

Companies may underestimate its complexity and think that it will boost their sales and profits, just for the fact of having it. On the contrary, a CRM system shouldn't be evaluated as a standalone tool; CRM is not a monolithic and deterministic IT tool that can automatically produce its effects. On the contrary, it needs to be connected with other resources before it can produce any effect (Baraldi and Waluszewski, 2005).

There's no receipt for success; every organization is different and different have to be the specificities of each CRM system, taking into account each firm peculiarities in terms of staff, structure, customers and technology (Meadows and Dibb, 2012). Organizational structure and culture, industry norms, customer type and relationship expectations of customers have an impact on CRM design and implementation (Steel et al., 2013).

CRM changes the information flow within a company; it affects technology, strategy, people and processes. It needs to be accepted and supported by all levels of the firm (Parvatiyar and Sheth, 2001; Xu et al., 2002). Given this cross-functional attitude of CRM, organizations should approach it holistically, setting it at the core of the company, in a manner that enables the coordination of disparate customer contact points (Bull, 2003). It demands for coordination of channels, technology, customers and employees (Boulding et al., 2005).

CRM processes have resulted to be more affected by infrastructural resources, such as human resources and organizational resources, rather than by purely technological resources. These CRM processes, if improved, will lead to better organizational performance (Keramati et al., 2010).

As stated above, CRM failures are not purely consequences of technological problems; the cause has to be found in inappropriate relational information processes; these could be positively influenced by a customer-centric management system and by the presence of a strong customer relationship orientation in the firm (Jayachandran et al., 2005). To improve organizational marketing performance and achieve customer satisfaction, the whole organization, at all levels, has to be aligned with CRM goals and it has to implement proper processes and technologies. Anyway environmental dynamism and competition negatively moderate the positive effect of customer satisfaction on organizational performance (Ata and Toker, 2012).

CRM technology have a positive effect on relationship strength, measured trough trust, commitment and communications quality, in B2B markets (Richard et al., 2005). Trust and commitment between customers and suppliers have a great impact on relationships success; Morgan and Hunt (1994) elaborated 10 beneficial effects: trust and commitment increase relationship termination costs, relationship benefits, shared values, communication, acquiescence and cooperation. They also increase functional conflict, which may be good for the development of the relation. They have a negative effect on customer's propensity to leave, uncertainty and opportunistic behavior.

However, it is not easy, to make managers and employees accept the introduction of a CRM system in the firm, as it will affect their daily routines and way of working. They could feel controlled, as they were losing some degree of autonomy, especially if they are senior managers, who have been dealing with important customers for all their career, without relying on any information processing system; they could also use it scarcely, just because they don't understand its usefulness (Perna and Baraldi, 2014). The adoption of a new technology and its acceptance, indeed, is always influenced by pre-existing sub-cultural silos of knowledge, psychological contracts and power based relationships within the organization, as they shape actors' perceptions about the new tool (Finnegan and Willcocks, 2006). For this reason is vital the support of top management.

Mendoza et al. (2007) found 13 critical success factors, relating to human factors, processes and technology, propitiating success in the implementation of a CRM strategy:

- guarantee the commitment and participation of the organization's senior executives in the CRM project;
- create a multidisciplinary team responsible for implementation of the CRM project;
- define the objectives to be achieved with the implementation of the CRM project;
- integrate the divergent areas of the company so as to meet the general CRM objectives of the company and of each of the areas;
- publish the objectives, benefits and implications of the project to all the company's staff;
- guarantee the staff's commitment to the CRM strategy;
- handle key information on the company's customers;
- provide a pre and post-sales customer service independent of the means the customer uses to communicate with the company;

- automate the company sales process;
- automate the activities and handling of marketing information in the company;
- implement mechanisms to support operational management;
- develop adequate channels of communication with customers;
- integrate Information Systems (IS) for consistency and availability of information related to customers in the company.

2.5 Strategic use of CRM

CRM may be used in strategic ways, to better manage the interactions occurring in buyer-seller relationships, in order to maximize the value that the customers bring to the company. As stated before, this value should not considered only in monetary terms, but also intangible value and indirect functions conducted by the customer should be considered. Not all the customer are the same, therefore they also have to be treated differently, according both to their requirements and to the value they provide to the organization. An analysis of the company's portfolio of relationships is necessary in order to understand the different value that each customer brings to the firm. Coherently with this approach, Kumar and Reinartz (2012: 4) define CRM as: *"the* *practice of analyzing and using marketing databases and leveraging communication technologies to determine corporate practices and methods that maximize the lifetime value of each customer to the firm. CRM aims to gain a long-term competitive advantage by optimally delivering value and satisfaction to the customer and extracting business value from the exchange".*

A successful CRM strategy requires four components (Kumar and Reinartz, 2012): a customer management orientation shared by the whole organization and supported by the top management; the integration and alignment of organizational processes; information capture and the alignment of technology; an implementation of the CRM strategy coherent with the goals set at strategic level. A customer management orientation means that the customer is at the center of all activity. The organization's set of values, beliefs and strategic actions should reflect this principle. All the organization processes, systems and reward systems should enable the implementation of customer management principles, recognizing that the value provided to target customers constitutes the driver of all processes. In addition, the incentive schemes, if properly set, should drive employee and organizational goals simultaneously. Information capture and alignment of technology demands for the capability to extract useful information from data; it is important that the organization is aware of the fact that technology is built around strategy, processes and people, and not the other way around. The implementation of CRM demands for the setting of activities and processes according to the changing phases of the relationship in order to extract value from it. A CRM system developed around the concept of customer value allows the integration of customer information across all contact and service channels, providing clients with appropriate responses at the right time. It ensures that all business procedures are conducted coherently with predetermined business rules. In this way, the company should be able to satisfy customer expectations and to adapt easily to changing market conditions.

2.6 Different typologies of CRM systems: main differences.

In the market are available hundreds versions of CRM software. The choice among them is not easy as very often the features are apparently similar. Anyway a big differentiation can be made between Open Source and Proprietary software. This chart explains the pro and cons of the two:

	Open Source CRM	Proprietary CRM
Features	Every organization that wishes to implement CRM defines features specific to their domain. Since open source software is supported by a community of developers, more features can be built for that piece of software in a shorter time scale.	The vendor who sells the CRM software has total control of the features made available through it. This situation leads to vendor lock where you or your organization has to rely on a third party CRM vendor to provide updates and features time to time. The software is accessible only through a well-defined interface and the consumer is unable to make any modifications to the CRM

		software without the consent of the vendor.
Customization	Since the source code is available, the organization using the CRM can either customize it with the help of in-house staff or request the CRM developer community to create custom code to implement the desired functionality.	Sometimes, an organization may require CRM software without any customization. Proprietary vendors offer highly customized products for different niche industries since they charge heavily for their products.
Updates	In the case of Open Source CRM**,** a developer community is responsible for managing	Proprietary CRM vendors may defer releasing one or two updates at a given time and may prefer releasing

	and updating code. If a bug has been discovered, then the organization using the CRM is forced to rely on this community to generate the appropriate workaround. However, the positive aspect is that the updates are released as they are developed resulting in minor version changes. Consumers should prefer using back-tested updates prior to implementing them on their system.	several updates simultaneously in the form of a new version. Consumers may be forced to pay high fees to use updates and there is no alternative since purchasing CRM from proprietary vendors enforces a vendor lock between the two parties.

Support	An active developer community is the utmost requirement while opting for an open source CRM.	This is one of the areas where a proprietary CRM system outperforms an open source CRM. The developer community is a set of loosely tied people who are not affiliated with any organization and as such, urgent assistance is out of question. It is the proprietary CRM vendor who offers excellent customer care and technical assistance at critical times thereby enabling the CRM consumer to meet their business objectives without fail.

Cost	Open source CRM can be declared the winner with respect to this aspect.	Proprietary CRM vendors charge not only for the software license but also for updates and support in certain cases and as such they are ten times more expensive than open source CRM systems.
Third party Integration	Open source CRM offer integration with cloud based services and tools such as Microsoft Outlook, HubSpot and Pardot.	Third party tools may or may not support integration with other tools. If integration is desired, it may invoke an additional expenditure on the consumer side. The system is tied to the hardware and software on which it runs and hence, changes in operating

		environment may necessitate software customization.

Source: Ramesh: 2012.

Another major differentiation can be made between in SaaP (Software as a Product) and SaaS (Software as a Service). In the first case we are speaking about a software to be installed on a computer and that runs on a proprietary server. On the other hand SaaS concern a software that does not need to be installed on a local computer; it runs on an external server. In this case, the user does not buy the software but the possibility to use it remotely through the Internet. Wikipedia[1] define SaaS as: *"a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. It is sometimes referred to as <on-demand software>. SaaS is typically accessed by users using a thin client via a web browser. SaaS has become a common delivery model for many business applications, including office and messaging software, payroll processing software, DBMS software, management software, CAD software, development software, gamification, virtualization,*

[1] https://en.wikipedia.org/wiki/Software_as_a_service

accounting, collaboration, customer relationship management (CRM), management information systems (MIS), enterprise resource planning (ERP), invoicing, human resource management (HRM), talent acquisition, content management (CM), antivirus software, and service desk management". SaaS is gradually increasing its market share as it provide some benefits compared to SaaP solutions.

Especially for small businesses, SaaS solutions may provide cost benefits, as they do not require investments in servers or stand-alone software. Companies do not need to maintain storage, updates, management, backup and recovery costs. Another advantage is that the user can access the software in any place, from any device (PC, tablet, smartphones), as the data are stored on an external server, thus eliminating also software and hardware update costs. The only requirement is to have an Internet connection. SaaS solutions are typically scalable, meaning that the user pay only for the features that he needs, but these can be expanded anytime. In this way, SaaS solutions also provide great elasticity, adapting to the changing user requirement. Adding a new user in the system is not a problem, as this can be done instantaneously. Users can select the services that best satisfy their requirements and that best integrate with other applications in use, thus a company spends minimum efforts in customization and integration activities.

SaaS also present some disadvantages. One of the majors is the fact that a company has to rely completely on the service provider reliability, as it gives away private data and information, who could be private and confidential. Both security and privacy of data might be affected. The service provider’s reputation and its privacy and security mechanisms must be excellent. Another disadvantage is that the company may become dependent on the provider, since it is difficult to transfer all the data into another system; this is the so called “vendor lock-in effect”. Another potential problem is that these software are designed to meet the requirements of a vast public and thus may not satisfy a company’ special requirements. In addition, customization is limited compared to a software made in house.

To conclude, there are pros and cons of SaaS but, especially for small businesses, the pros outweighs the cons, as they will enjoy not having to deal with technical issues and they can reduce setting up and maintenance costs. Furthermore, the features of SaaS solutions, even if not completely customizable, can satisfy the requirements of most small businesses.

Chapter 3: Research Goals and Methodology of the field study

3.1 Research Goals.

This thesis aims to increase knowledge in the field of information management in micro industrial companies. More specifically the focus is on the processes and practices that transform unstructured customer information in structured customer knowledge. Customer Relationship Management systems provide a useful tool to operate this transformation. The effects of CRM systems have been widely investigated, especially in large business-to-consumer companies (Zablah et al., 2004). On the contrary, in literature there is a knowledge gap concerning the implementation of CRM systems in micro industrial companies. The issue is relevant, as this category of enterprises, extremely widespread in the Italian context, would particularly benefit from the application of such information management systems, as they typically lack organized mechanisms to rely on, before undertaking strategic actions.

Therefore, the purpose of this research is twofold: to shed light on the process of CRM system implementation in a micro industrial company and to examine the effects of the introduction of that system into the company. In other terms, this research aims to answer the following questions: which are the relevant factors to consider when setting up a CRM system in a micro industrial company? What are the intra-organizational effects of the introduction of a CRM system in a micro industrial company?

3.2 Research design.

This study contains data collected over a period of two years by means of direct participation in the setting up of a Customer Portfolio Analysis model and in the implementation of a CRM system for Antrox Ltd.

The research is conducted by means of a single in depth qualitative case study. The qualitative method provides accurate and deep understanding of the reality (Yin, 2003). The case study is a good method to *"investigate a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident"* (Yin, 2003: 13). The case study is used especially in situations where the variables to be observed are many, so many data sources are needed and benefits from the prior development of theoretical propositions that guide the collection and analysis of data. The case study is the most flexible method to understand and analyze the complexity of a somewhat new phenomenon for the researcher.

In the case of qualitative studies, Maxwell (1996) differentiates between internal and external generalization. Internal generalization refers to situations in which the research results can be generalized only for the analyzed unit or group. On the contrary, search results are valid for a broader group with external generalization. Case studies are especially valid for internal generalization, whereas, context dependency may limit external generalization.

Yin (2003) identified three different types of case studies:

- descriptive case study. The objective is to deeply analyze and introduce the given phenomenon or problem;
- exploratory case study. The aim is to introduce and explore certain decisions, phenomenon or incidents by analyzing the selected cases;
- explanatory case study. The scope is to interpret and comment a decision, incident or a problem.

This research is based on a single exploratory case study, as the goal is to shed light on the process, effects and results of a CRM system implementation in a micro industrial context.

Case study analysis provides the chance to open up and understand the analyzed context, and it fosters inductive theory building from the processed cases (Yin, 2003).

According to Eisenhardt (1989), the case study method usually proceeds step by step. It does not aim to test prior hypothesizes, but focuses on understanding a phenomenon, through the identifying of problems by observing the researched subjects. Conclusions are drawn from these observations. Although the case study method may not end up in a pure or well developed theory, it is of the most appropriate methods to analyze non-discovered research fields.

Case studies may not be fully generalizable, but Antrox is a firm representative of the Italian context of micro industrial companies, often characterized by the lacking of structured marketing practices and whose strategic actions are taken following the entrepreneurs' personal intuitions and experiences. This case study offers good learning potential on the topic of CRM system implementation in this particular context.

The case study has been carried out by performing action research (Lewin, 1946), which is characterized by the active participation of the researchers in the organization being observed (Coughland and Coghlan, 2002). Action research is an approach that has emerged over time from a broad range of fields. Action research challenges the view of knowledge which holds that in order to be credible, the researcher should not interact with the object being observed. Reason and Bradbury (2001: 1) define it as :*"a* *participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview which we believe is emerging at this historical moment. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions".*

I participated actively to the identification of the variables to analyze the company's relationships and to the implementation of the CRM system. The action research is a good way to study phenomena in their context and dynamism, not limited to only capture causal relationships between social facts (Eden and Huxham, 1996).

All most relevant contributions to CRM implementation have been reviewed, but few of them concerned the context of micro industrial companies. This thesis contributes to the understanding of the CRM implementation process in those settings. First, Walter et al. (2001) model has been applied for the company's customer portfolio analysis, allowing the individuation of different value contributions. The theoretical framework of this study is based on the IMP perspective about buyer-seller relationships (Håkansson, 1982; Håkansson and Snehota, 1995; Ford et al., 2011). The effects of the CRM system are investigated relying on the concept of resource interaction (Ford et al., 2011). The value and contributions of CRM depend on the interactions between the CRM and several other resources, like other IT tools, individuals and organizational units (Baraldi, 2003).

3.3 Data collection.

To increase case validity, different sources of data have been embraced (Eisenhardt, 1989): participation in meetings, e-mail and websites analysis, invoices, internal reports and brochures. In addition, semi structured face-to-face interviews with the Antrox managers, employees and collaborators were conducted, ranging from 30 minutes to more than an hour. During all of them, notes, keywords and sentences have been wrote down. Some of them were also digitally recorded. I have been also an active user of the CRM as I populated the system and customized it accordingly to the company's guidelines. The following table expresses the strengths and weakness of the different sources of evidence used.

Source of Evidence	Strengths	Weaknesses
Documents	• stable, repeated review • unobtrusive, exist before case study • exact names	• difficult retrievability • biased selectivity • reflects author bias

	• broad coverage, extended time span	• access may be blocked
Archival Records	• same as documents • precise and quantitative	• same as documents • privacy might inhibit access
Interviews	• targeted, focuses on case study topic • insightful, provides perceived causal inferences	• lack of completeness due to poor questions • response bias • incomplete recollection • reflexivity, interviewee expresses what interviewer wants to hear
Direct Observation	• reality, covers events in real time • contextual, covers event context	• time-consuming • selectivity, might miss facts • reflexivity, observer's presence might cause change • cost, observers need time
Participant Observation	• same as direct observation • insightful into interpersonal behaviour	• same as direct observation • bias due to investigator's actions

Physical Artifacts	• insightful into cultural features and technical operations	• selectivity • availability

Source: Yin (2003).

The following table shows the sources used, in which period and concerning which topic.

Source of Evidence	Period	Topic Investigated
Documents: catalogues, website, company brochures, balance sheets	• From September 2014 and regularly updated	• company basic information • product information • economic and financial data
Archival Records: Internal reports, budget, emails, strategic plans, invoices	• From October 2014 and regularly updated	• customer information • customer management practices • turnover details • business analysis and forecasts • strategic plans

Interviews	• September, October and December 2014 • June 2015 • January, May and September 2016	• In depth analysis of topics investigated through Documents and Archival Records • CRM specifics
Direct Observation	• January 2015 (interior design fair)	• Company products and competitors
Participant Observation	• Monday morning company meetings since October 2014	• Weekly internal updates on business trends • CRM software implementation
Physical Artifacts	• September 2014 • January 2015 • September 2016	• Company products and innovations

Chapter 4: The development of a CRM system for Antrox

4.1 Small and Micro companies' context.

Antrox Srl., the company object of this study, is a micro company, according to the European Commission classification of companies' size, which is done considering the companies' number of employees, turnover and profits.

	Employees		Turnover		Profits
Large Enterprise	≥250	Or	50 mln.€	or	≥43 mln.€
Medium Enterprise	<250	And	≤50 mln.€	and	≤43 mln.€
Small Enterprise	<50	And	≤10 mln.€	and	≤10 mln.€
Micro Enterprise	<10	And	≤2 mln.€	and	≤2 mln.€

Source: European Commission.

Micro companies are an important part of European economy and fundamental for Italy.

	N. of Enterprises (mln.)	N. of Enterprises (share)	Persons Employed (mln.)	Persons Employed (share)
All Enterprises	21.0	100%	135.8	100%
All SMEs	20.9	99.8%	90.6	66.7%
Micro	19.3	92.0%	39.3	29.0%
Small	1.4	6.7%	27.9	20.5%
Medium	0.2	1.1%	23.4	17.2%
Large	0.0	0.2%	45.2	33.3%

Source: Eurostat report about EU enterprises, 2008 data.

In Italy, the presence of Micro Companies accounts for 94.3% of Total Enterprises, thus representing the bulk of the Italian economic and social structure (Eurostat).

Small and micro companies present some characteristics (McCartan-Quinn and Carson, 2003):

- The important presence of the entrepreneur in all major decision and actions
- An highly personalized and informal management style
- Non-standardized knowledge management systems
- Often more Creative and Innovative than Large firms
- High Degree of Adaptability to Client Requirements
- Product Personalization

- Decision taking is reactive to the market (rather than the result of a strategic analysis)
- Disposal of limited financial, human, material and informational resources
- Static Business Models
- Lack of a Structured Marketing Function

In these companies, the marketing function is often blurred with the selling function, as very often the marketing takes place during the selling process. Micro companies typically are over dependent on the marketing ability of the entrepreneur and lack the resources for well-planned marketing activities. Their marketing actions usually take place in response to a changing market situation and are almost never in anticipation.

Nevertheless small size and especially micro companies have the marketing advantage of having close relationships between the entrepreneur and the customers. Through interactions, entrepreneurs get to know their customers personally and small companies are generally flexible in responding to their inquiries, leading to higher customer loyalty and satisfaction (Carson, 1985).

There is no doubt that small and micro size companies would highly benefit from the presence of more standardized knowledge management systems (Fortezza, 2006). Through these systems, the company' strategic decision are not taken following only the entrepreneur's intuitions and personal assessments, which are nevertheless very valuable, but are also the result of the analysis of structured information that the company must be able to record and manage in a standardized manner.

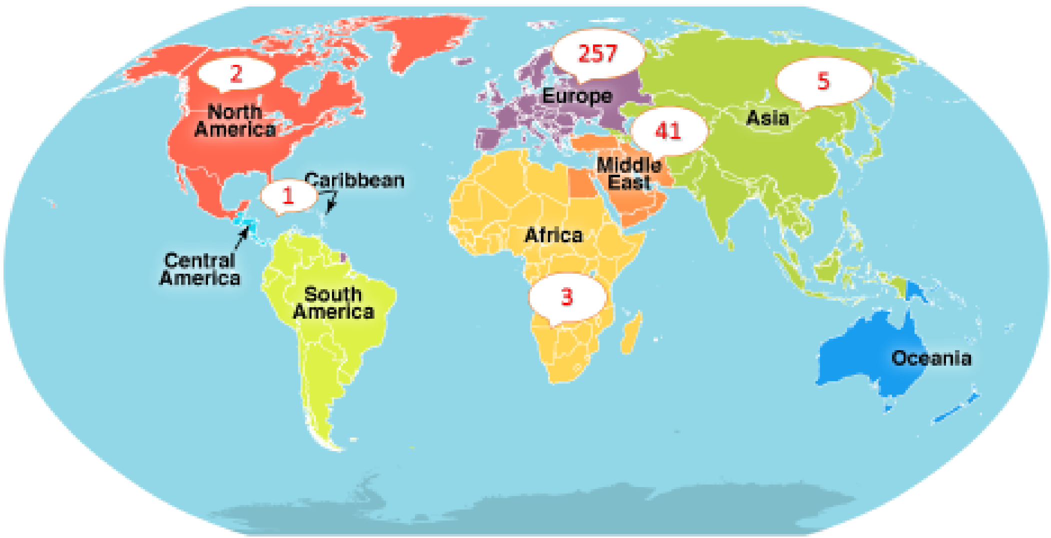
During the first decade of the XXI century, CRM systems started to be adopted worldwide, but only big companies could sustain their investment. Software were expensive, complicated and needed technical skills for their implementation. Also hardware costs were relevant. Gradually, they become more and more affordable, first with the spread of Open Source systems and recently with the large diffusion of Proprietary Cloud solutions that are free or require very small investments. Modern CRM systems, for their affordability and ease of use, seem to have the potential to reduce the knowledge management gap of small and micro companies.

4.2 Antrox Ltd.

Antrox is an Italian Ltd. company that provides tailored lighting solutions. It was founded in 2004 in Ancona; at the moment the company is split in two equal shares between Dr. Luca Giraldi, who takes care of the management of the company, and Mr. Massimo Rinaldi, in charge of the technical and commercial aspects. Other people working in the firm are: lighting engineers, an accountant and an IT systems professional. The company sells professional solutions capable of satisfying any lighting request. Their lighting solutions characterize for high performances, great reliability and a premium customer service. They sell primarily to individual architects, distributors and contractors involved in big projects (i.e. hotels, restaurants, shopping centers…). The company realized important architectural projects worldwide such as the Grosvenor House (Dubai), the Archeological Museum of Alicante, the Mardan Palace (Antalya), the Royal Complex of Amman, the Ankara Airport, the Mugam House (Baku).

They don't just sell the product, but they assist the client in designing and realizing the desired lighting experience. Every year they sell in about 15 - 20 different countries.

The following image shows the location of all the company's clients in the period 2008 - 2015.



The company's turnover varies deeply from year to year, as picking a big project can really boost revenues.

2011 was the best performing year of the company, as their sales accounted for more than 5 mln. €. During the other years, revenues varied from 0,5 to 2,4 mln. €. Every year the company concludes between 100 and 200 transactions, with a range of clients between 50 and 90. They have a wide network of distributors all around the globe, who keeps them updated about job opportunities. They are now selling two categories of lights: Cold Cathode and Led. The former is the technology who made the fortune of the company. It was customizable in shapes and colors, but required technical capabilities and a deep knowledge of its functioning. Led is a newer, cheaper and more efficient technology. It is easier to shape and customize, as its design and realization does not require big technical capabilities. The global market is gradually adopting Led technology for most uses, but the Cold Cathode technology remains superior in some applications. Since 2013, the company, in addition to Cold Cathode, started selling Led Lighting Solutions. Big structured companies were already present in the Led market and, in the last couple of years, the competition became even more intense, especially abroad. Antrox still has the potential to be competitive in this market, as its value does not derive purely from the product, but mostly from its designing service.

Since the widespread of Led technologies, Antrox's revenues are slightly reducing. The company had a worldwide reputation and contacts with important distributors in the Cold Cathode market; on the contrary, in the Led market, it has to face a fierce competition by big important players. As a result, since 2012 (the boom year of Led), the company's annual turnover reduced significantly. The management was very conscious of the need to find ways to be more present in the Led market and tried to develop new relationships with distributors in areas never covered before and new suppliers. The company also tried to update and enlarge its offering, creating partnerships with other companies. At the same time, Antrox was aware of the fact that they needed to put more care in the management of the company's relationships. Mr. Daniele Traferro was the founder of the company and was the one who knew personally every client and the one who dealt with most of them. He had his own unstructured, personal way of maintaining customer relationships. He personally knew and contacted his customers by phone or email. Sometimes he also met them personally. Also other members of the company interacted with clients, but Mr. Traferro was undoubtedly Antrox's first commercial manager. With some of these clients, there was some kind of friendship, developed in several years of activity, as manager of Antrox and as commercial agent of iGuzzini, another lighting company for which he worked for many years. When he left the company, for personal reasons in September 2014, Antrox lost a big amount of information regarding its customers, their requirements and their buying behaviors. The company could rely only on Mr. Traferro's emails, notes and unstructured excel files. His departure produced a shock in the company and the management immediately realized that they needed a new structured way to manage customer relationships, to prevent future losses of relevant information. The company decided to set up a CRM system in order to reach in the medium period the following goals:

- store all the relevant customer information in one place;

- develop structured mechanisms and procedures to manage customers, according to their characteristics, requirements, buying history and behaviors, phase of the relationship, value;
- develop and share a customer centric culture within the company;
- offer better, personalized service to customers;
- maximize value and opportunities coming from customers.

4.3. Setting up the CRM system.

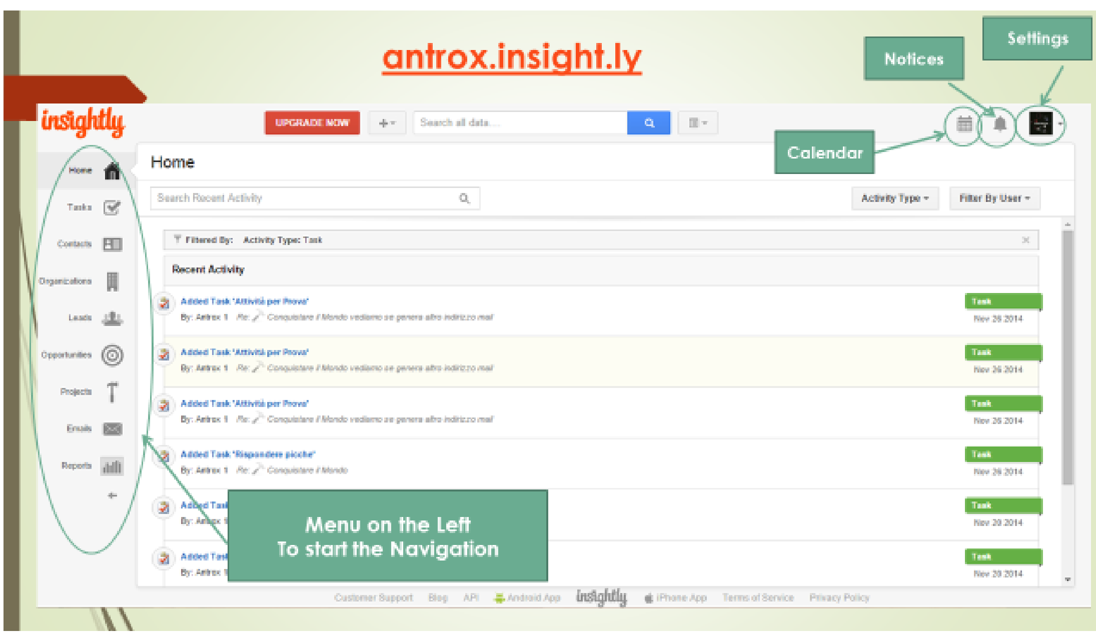
In October 2014 Dr. Giraldi appointed me to make a benchmark of CRM systems that had to be free (at least for one year); intuitive and simple to use; available in Italian language and cloud based. He was absolutely conscious of the necessity to develop a structured way to manage customer relationships and he persuaded the other Antrox members.

After few weeks of research and tests of different CRM systems, the research was restricted to four free cloud solutions: Capsule (capsulecrm.com), Free CRM (www.freecrm.com), Zoho (www.zoho.com/crm) and Insightly (insightly.com). This chart summarize the main features of the four CRM systems at that time.

	Capsule	Free CRM	Zoho	Insightly
N. of Users	2	100	10	2
Storage	10 mb / 250 contacts	100.00 Contacts	1 gb / 25.000 contacts	200 mb / 2.500 contacts
Duration	Forever	1 year	Forever	Forever
API	YES	YES	YES	YES
Outlook Integration	YES	YES	NO	YES
Newsletter	NO	NO	NO	MAX 10 Mass email per day
Accessible Smartphone / Tablet	YES	YES	YES	YES
Features compared to pay version	Inferior	Slightly Inferior	Inferior	The Same

For what concern the number of users who can access simultaneously the system, Free CRM was the best choice, as it could grant access to 100 users simultaneously. Anyway, this feature should not be considered as the number of people accessing to the system, but as the number of levels of permission available. Thus, even if the system allows up to two user to access the system (like in the case of Capsule and Insightly for instance), more people can access it and compute simultaneously, but only through two user settings. User settings concern mainly what the user can access in the system: everything, or just a part of it, if there are some private folders. For what concern storage, Zoho was by far the best solution, as it granted 1 gb or 25.000 contacts to be inserted in the system. Capsule was not considered as a potential system to adopt as it granted minimum storage capacity in the free version. So our benchmark restricted to three providers. Free CRM was also neglected from the benchmark as it was free, but only for the first year, whereas for Antrox this had to be a long term project. All the CRM systems offered Application Programming Interfaces (API): they permit the implementation of some functions of the program, or to make some changes, without having access to the entire source code. They permit a limited customizability compared to Open Source solutions and some technical competences are required. A major point in favor of Insightly was that it could be integrated with Outlook, meaning that through a plug-in, all the emails exchanged with Outlook, were automatically stored in the system. Insightly was also the only system offering the possibility to send mass emails, even if in a very small number. All the four were accessible from smartphone or tablet. A big point in favor of Insightly was that it offered the same features of the pay version in the free version. Antrox's management analyzed the benchmark and the final choice was to be made between Zoho and Insightly. Both providers had an excellent reputation in the market for what concern security and privacy and both are market leaders in the Cloud CRM market. At the end the company opted for Insightly because it had a more easy and intuitive interface compared to Zoho; because it allowed Outlook integration and because of it offered a complete package of features. The main limitation of Insightly free version was the storage capacity that was big but not unlimited. The company decided that if the system resulted to be useful, once the storage capacity of the free version was full, the company would have upgraded to the pay version, which was anyway affordable (12$ per month) and which granted a storage up to 25.000 contacts.

After the company's decision, a free account was created and populated with data. Several Mr. Traferro past emails were analyzed, in order to find client details, such as organization name, personal contacts, website address, telephone number and so on. This is how Antrox's Insightly looks like:



It is structured with a Menu on the Left to start the navigation, composed of Home Page, Tasks to be accomplished, List of Contacts, List of Organizations, List of Leads, List of Opportunities, List of Projects, List of Emails and Reports. On the top right a very simple three-bottom system, allows the user to access Calendar, Notices and Settings. A system of tags, allows to create customized subcategories.

Together with Dr. Giraldi, a meeting was organized, in order to show to the other Antrox members how the system worked and to answer their questions. The feedback was generally positive and they all agreed to start using the system. Of course, the support of the administrative manager was of vital importance for the system to be accepted. In this phase, the CRM was still in beta, basically a big list of clients with few system customizations. It was agreed to implement the system later on, listening to the users' feedbacks and applying the strategy that will emerge from the analysis of the customer base.

In order to implement the system coherently with the company's requirements all the workflows and processes involved during the interactions with customers were mapped. Mr. Rinaldi, the technical manager of the company is the one who replies to clients' requests, proposing solutions and negotiating prices. He has the final word on the technical aspects of each offer but he often confront himself with his technical assistant and, for big projects, also with the administrative manager. Massimo set prices applying a fix margin; discounts are based on the volumes purchased, on the relationship history and on the personal negotiation with the client. Offers are sent by email, sometimes followed by phone calls. All the offers details are stored in single Excel spreadsheet files, stored in technical manager computer. There is no system to share files and information, apart from Outlook. The risk is to reply what happened when Mr. Traferro left the company, as he took with him valuable information about offers and customer relationships. That information belong to whole the firm and not to any key account manager. The company relies only on four categories of software: Outlook, Office, technical programs for drawing / lighting calculations and a software for the management of invoices; there were no problem of integration between the CRM and other IT systems.

There are no standard activities to recover interrupted relationships or to find new clients. All the strategic actions are the result of intuitions of the administrative and technical manager. When Mr. Traferro was still operating in the company, he was the one setting the roadmap, planning participations at lighting fairs and selecting target markets. Having worked for 30 years in the lighting market, he developed and maintained personally relationships with distributors and important client around the globe. After many years in the field, he acquired respect and trust among players of the lighting market. When he left the company, some of those relationships interrupted just because he did not represent anymore the clients' interface with Antrox. Besides, he was also the one who was reluctant to diversify Antrox offering: he did not want to enter the led market because he was convinced the Cold Cathode solutions were still ahead of technology for professional applications. Nevertheless, he had to change his mind in 2013, when it was clear that the global market was turning into Led technologies. Antrox heavily paid this late understanding of market requirements, with the loss of several distributors and clients worldwide, who, in the meantime, changed their suppliers.

The company's management identified current gaps in relationship management as interaction episodes, activities and strategies were extemporarily managed:

- the lack of a standardized way to interact with customers (which activities to perform, in which order and under whose responsibility)
- no clear methodology to look for potential opportunities
- no clear methodology to screen and select target markets
- no sharing of customer and market information among the company's employees

Furthermore, they identified the need to develop specific actions according to the relationship features, requirements, history and potentials. They decided to develop a new framework to better respond to the variety of their relationships and to extract value from all of them. Dr. Giraldi appointed me to analyze their customer base, in order to find variables capable of expressing the different value that each relationship was and / or could bring to the company. Once the different typologies were identified, specific strategies to interact with each one of them could be developed.

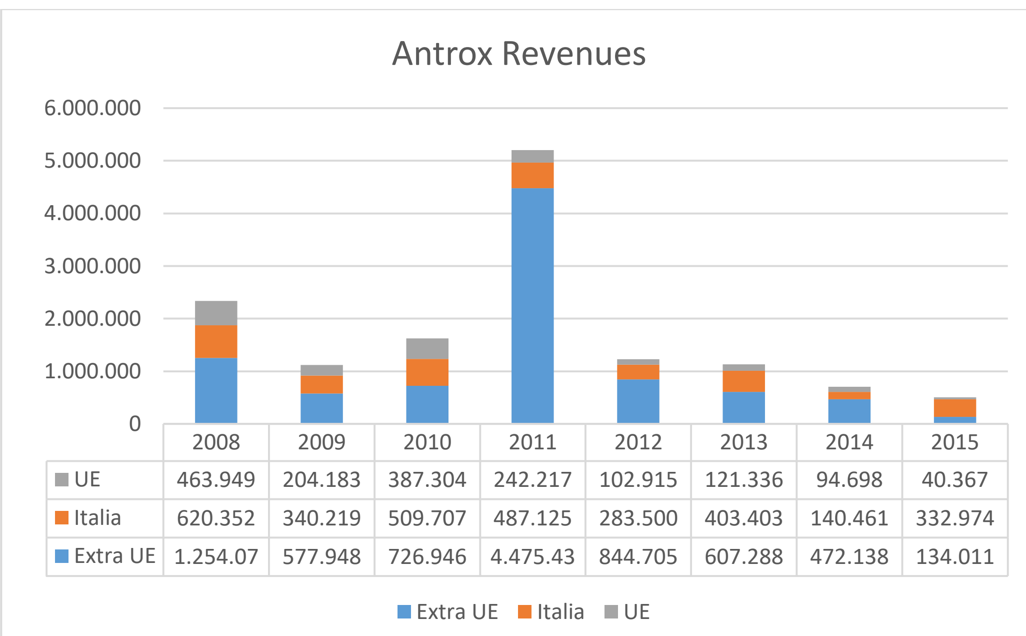
4.4 Customer Portfolio Analysis: main findings.

In order to better understand the value that each relationship was bringing to the company, together with Dr. Giraldi, a model of customer portfolio analysis tailored to Antrox was developed. The model considers both direct and indirect functions that each relationship unfolds to the company. The variables were chosen accordingly to the peculiarities of Antrox's customer base in terms of:

- client features
- purchasing behavior
- product exchanged
- distribution patterns

- relational aspects
- future development trajectories

The analysis of the customer base involved both quantitative and qualitative methods. For what concern quantitative analysis, all the company's invoices for the period 2008-2015 were collected and aggregated on a single Excel spreadsheet. They resulted into a total of 1563 transactions made by 309 different companies. 10 relationships were not considered in the analysis as they regarded ex company's employees. Then several charts were created, in order to find the most important clients according to several variables, as shown in the following graphs.



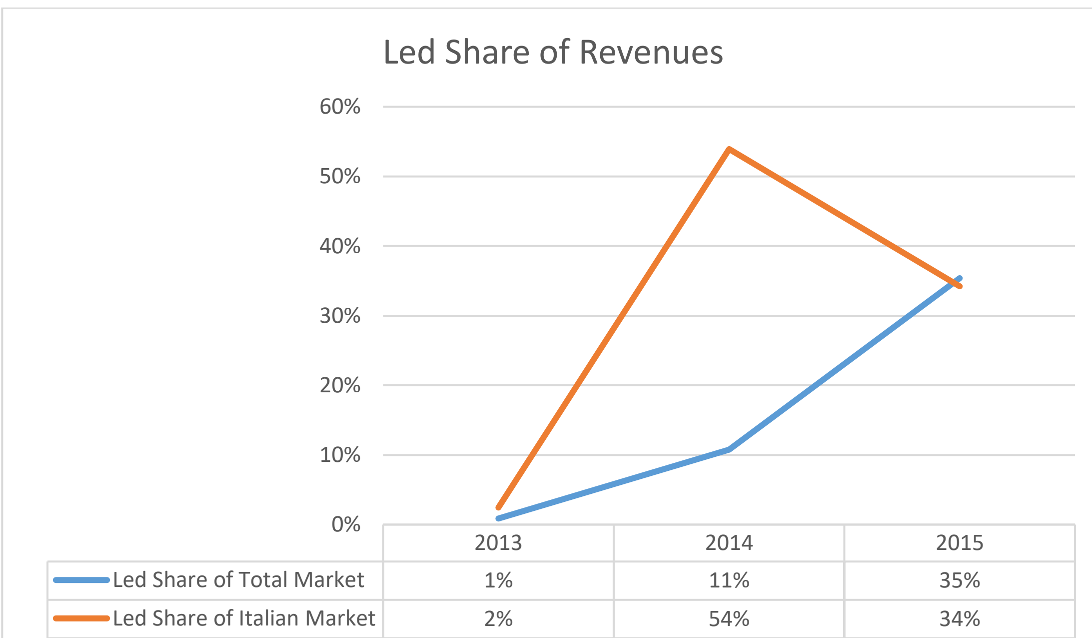
Total Revenues varied through the years:

- 2008: 2.338.371 €
- 2009: 1.122.350 €
- 2010: 1.623.957 €
- 2011: 5.204.781 €
- 2012: 1.231.120 €
- 2013: 1.132.027 €
- 2014: 707.297 €
- 2015: 507.352 €

2011 was the company's best performing year, thanks to the realization of a big project for a United Arab Emirates company that accounted for more than 4 mln. €. In the last two years revenues started to decline. According to Dr. Giraldi, the main reason behind this situation, is the diffusion of Led Technologies in the market, in detriment of Cold Cathode lighting systems. Indeed Antrox was by far more competitive in the former market, whereas in the latter, the competition is severe, with big important players worldwide. Another reason for revenues decline could be linked to the departure of Mr. Traferro, who interacted personally with the clients. Antrox did not have a structured database about customers, but some relevant information was in the mind of Mr.

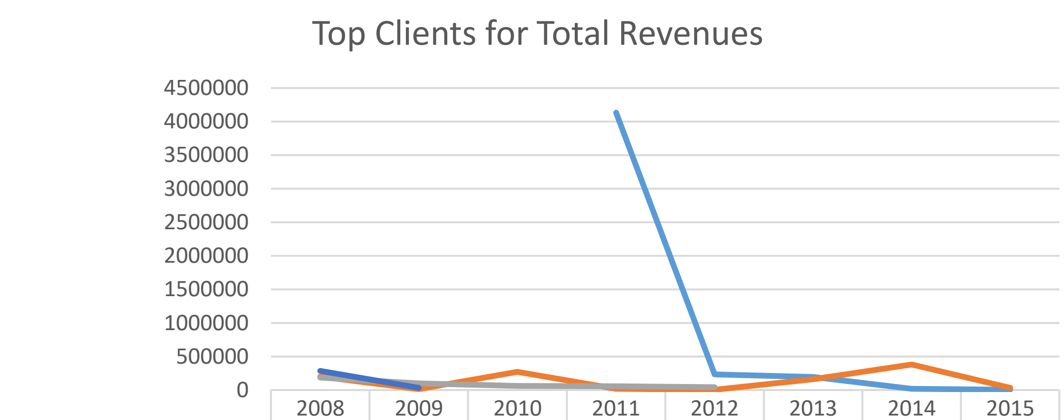
Traferro, so when he left the company, Antrox also lost knowledge about its customer base, its behaviors and preferences. This fact presumably reflected negatively in negotiations and interactions between the company and the buyers.

In the period 2008 – 2015 the distribution of revenues between different areas of the world varied without a clear pattern. Anyway the share of the Italian market was always in the minority compared to exports, except from year 2015, when it accounted for 66% of total revenues.



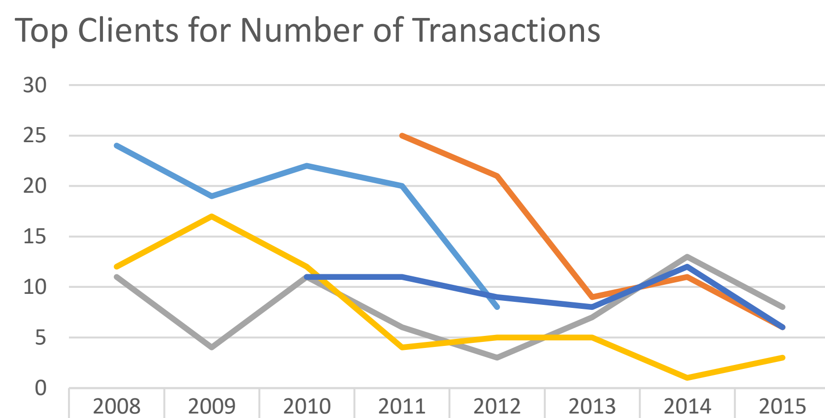
Antrox started commercializing Led solutions since 2013. Led products sold only in Italy, Saudi Arabia, Emirates, Iceland, Spain and UK. In 2015 they accounted for the

35% of Total Revenues. The adoption of Antrox Led technologies was faster in the Italian market, where they accounted for more than a half of the Italian market. In 2015 the share of Led revenues was similar in Italy and abroad, as the company picked a couple of big cathode orders in Italy.



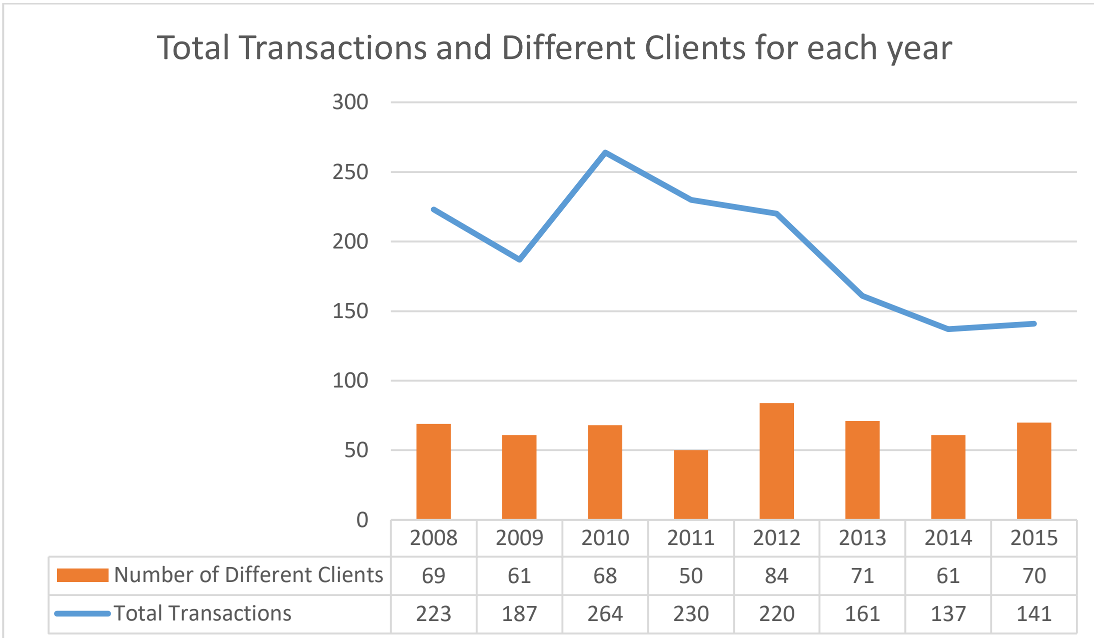
	2008	2009	2010	2011	2012	2013	2014	2015
Nouran Trading				4.131.127	237.767	195.772	21.473	5.188
Tepta	203.123	17.947	273.007	21.172	7.642	166.222	383.121	33.370
Diathlasis	187.879	103.864	66.195	58.330	47.071			
Aman Hospitality					353.347			
Ayla Hotels	285.724	37.570						

The top clients for total revenues in the period 2008-2015 are Nouran Trading, Tepta, Diathlasis, Aman Hospitality and Ayla Hotels, but only Tepta accounted for at least one transactions in each of those years. This graph shows clearly how a big order can really boost revenues. For instance, the project realized for Nouran Trading in 2011 accounted for 79% of the year total revenues. In the following years, Antrox continued to trade with Nouran Trading but for smaller amounts concerning mostly post sale service and spare parts.



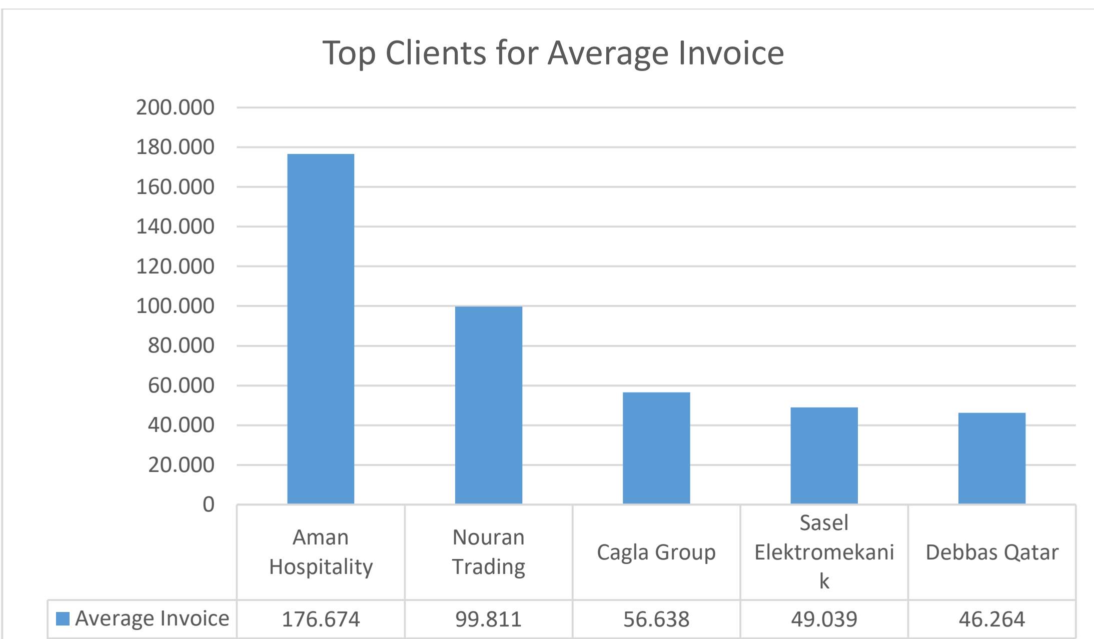
	2008	2009	2010	2011	2012	2013	2014	2015
Diathlasis	24	19	22	20	8			
Iluminacion Delta				25	21	9	11	6
Tepta	11	4	11	6	3	7	13	8
Lumen Art	12	17	12	4	5	5	1	3
Antares Iluminacion			11	11	9	8	12	6

The above table shows the company's most loyal customers in terms of total number of transactions for the period 2008 – 2015. Diathlasis was the company that repeated the highest number of purchases in the period but the relationships stopped in 2012, as many of its clients started requiring Led technologies and Antrox started commercializing them only in 2013. The late reaction of Antrox to the changing market conditions resulted in the interruption of several relationships like this.

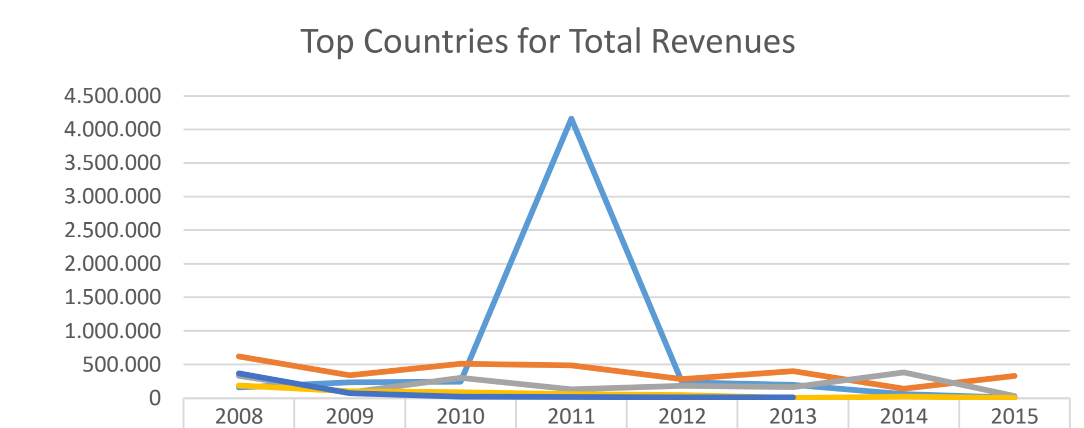


The number of transactions per year declined each year in the period considered, except for 2015: in 2008 the company registered 223 transactions; 187 in 2009; 264 in 2010; 230 in 2011; 220 in 2012; 161 in 2013; 137 in 2014; 141 in 2015. The chart shows also the number of different clients for each year. As we see, there is no proportional association between the number of transactions and the number of unique clients per year. According to Dr. Giraldi, the reason is the necessity for the company to concentrate on few profitable clients, giving them the best possible service.

If we compare the Top Clients for Revenues with the Top Clients for number of transactions we find out that only Diathlasis and Tepta compare in both charts. This means that Antrox's best clients in terms of revenues are not the ones that purchase repeatedly through the year. The company's best clients in terms of revenues typically come from Extra EU countries and make single big orders due to the high costs of delivery and duties. On the contrary, clients that repeat small purchases through the year are located in EU countries, where the above mentioned costs are not so relevant. As a result, clients located in EU, relate differently with Antrox. They can choose to make small orders or to divide a big order in more transactions, as single purchases may vary according to the evolving project requirements.

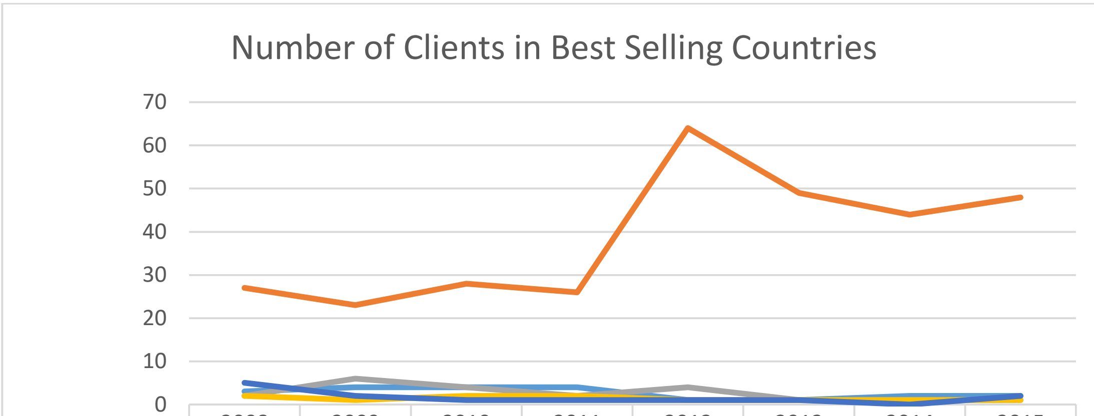


The above chart confirms how companies coming from Extra EU countries are the ones who make relevant purchases with a single order. Indeed none of the top clients for average invoice comes from EU.



	2008	2009	2010	2011	2012	2013	2014	2015
UAE	160.486	237.979	245.243	4.160.865	237.767	195.772	58.972	5.401
Italy	620.352	340.219	509.707	487.881	283.500	403.403	140.971	332.974
Turkey	329.829	81.368	301.978	132.948	181.330	166.222	383.121	33.370
Greece	189.935	103.864	87.235	59.635	47.071	3.655	20.082	2.877
Jordan	370.396	74.054	19.363	17.380	12.886	10.602		8.472

In the period 2008 – 2015, Antrox best sold in United Arab Emirates (5.302.485 €), Italy (3.119.008 €), Turkey (1.610.166 €), Greece (514.356 €) and Jordan (513.154 €). Other important countries for total revenues in the period are: India (377.770 €), Spain (375.477 €), Finland (271.360 €), Lebanon (242.115 €) and Qatar (185.055 €).

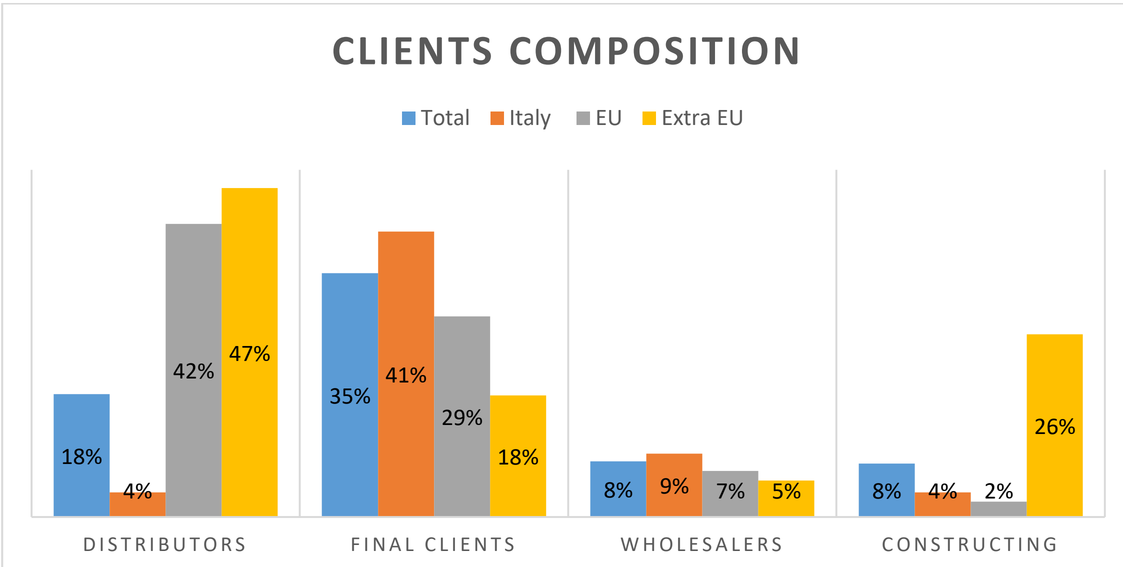


	2008	2009	2010	2011	2012	2013	2014	2015
UAE	3	4	4	4	1	1	2	2
Italy	27	23	28	26	64	49	44	48
Turkey	2	6	4	2	4	1	1	1
Greece	2	1	2	2	1	1	1	1
Jordan	5	2	1	1	1	1	0	2

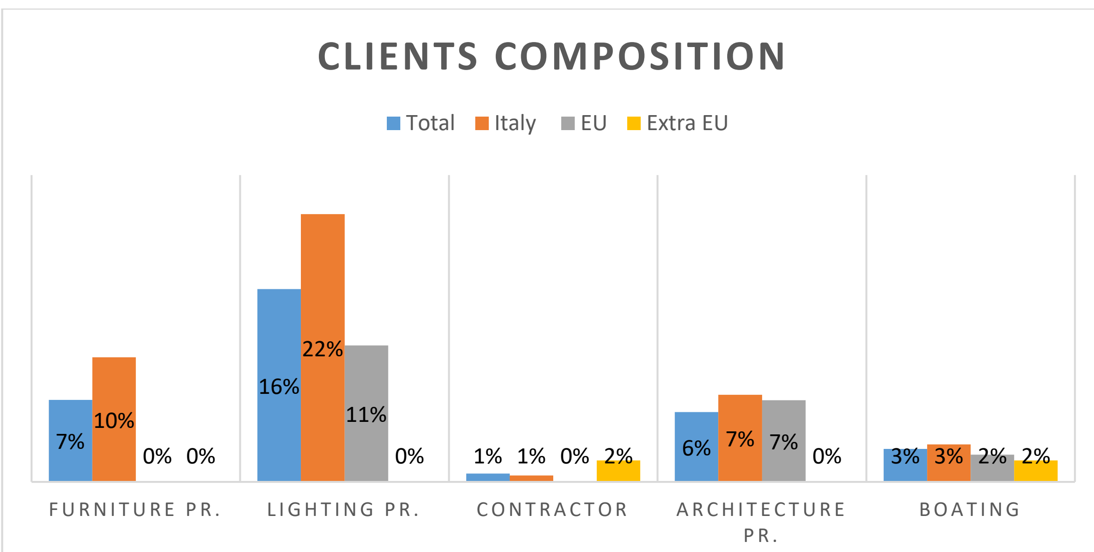
Antrox has few important distributors abroad. Typically, the company has one or two distributors in each of the countries in which operates. The establishment of a long lasting relationship with these clients is of vital importance for the company and can generate substantial revenues through the years. This chart clearly show how the company operates in two completely different ways in Italy and abroad: In Italy, it sells directly to several industrial clients and interacts directly with them; abroad it has to deal with few distributors for each country and is dependent upon their intermediation service. Indeed are the distributors that contact Antrox when they receive an order from local clients.

Furthermore, since 2013, the year in which Antrox started to sell regularly Led lights, the number of Italian clients raised enormously. Indeed the market was globally adopting Led technology but Antrox resulted to be more competitive domestically rather than abroad, where big structured companies already dominated the market.

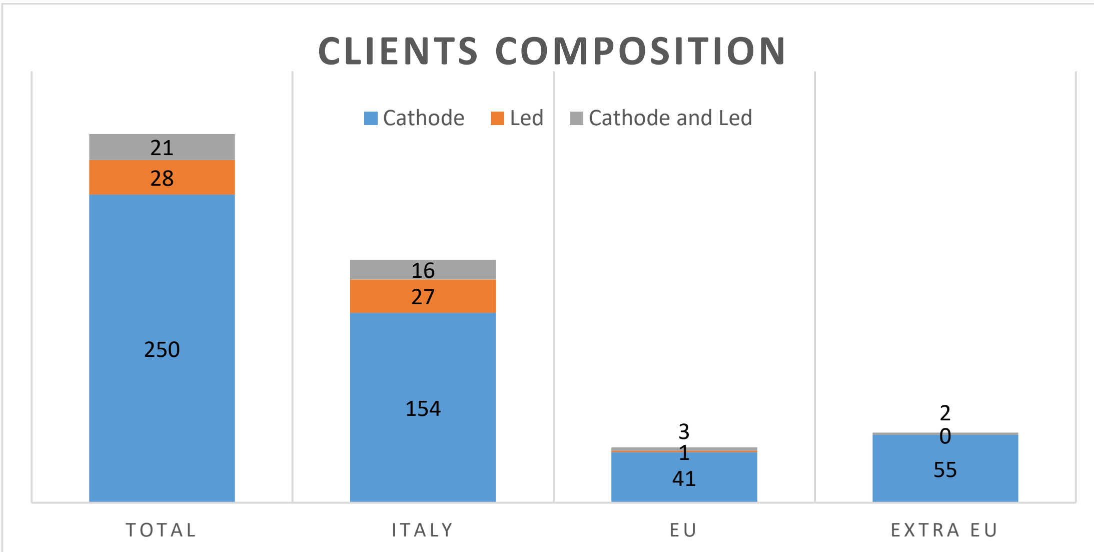
Nevertheless, several variables were not possible to analyze using the information contained in the invoices, therefore several interviews with Dr. Giraldi were made, in order to fill the knowledge gap about Antrox's customer base. For each relationship, have been investigated: Shipping costs, Country Taxes and Fees, Relationship Difficulties, Customer Satisfaction, Relationship Importance, Relationship Potential and Country Appeal. A number from one to three was assigned to all the variables, where 1 stands for minimum and 3 for maximum value. The variables used to assess the Country appeal were: GDP growth, Market Size, Competitors' Strength, the presence of Cultural Barriers and the level of Political Stability. With a great disposal of quantitative and qualitative information about the customer base, a deep analysis of each relationship was carried.



CLIENTS COMPOSITION
Total
Italy
EU
Extra EU
18%
4%
42%
47%
35%
41%
29%
18%
8%
9%
7%
5%
8%
4%
2%
26%
DISTRIBUTORS
FINAL CLIENTS
WHOLESALERS
CONSTRUCTING



CLIENTS COMPOSITION
Total
Italy
EU
Extra EU
7%
10%
0%
0%
16%
22%
11%
0%
1%
1%
0%
2%
6%
7%
7%
0%
3%
3%
2%
2%
FURNITURE PR.
LIGHTING PR.
CONTRACTOR
ARCHITECTURE PR.
BOATING



These are some of the evidences found:

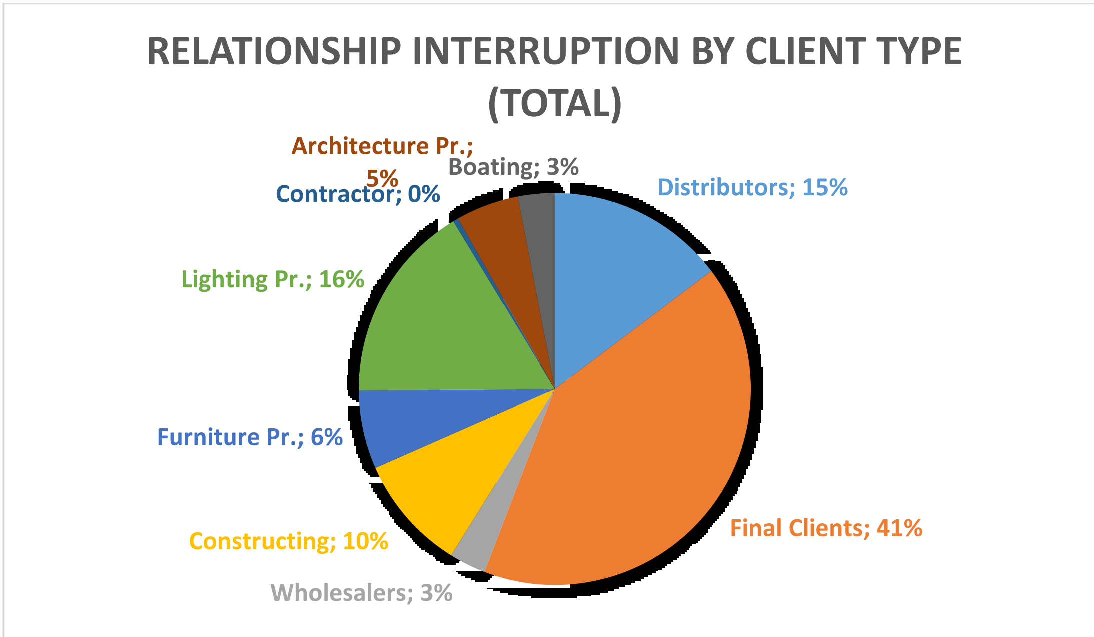
- Globally, individual Final Clients represent the majority of customers (35%), followed by Distributors (18%) and Lighting professional (16%). Wholesalers and Constructing companies account for the 8% of the customers; 7% for Furniture and 6% for Architectural or Engineering companies. Boating construction companies and Contractors represent a small percentage of customer base (2% and 1%). The situation is different in Italy and abroad, especially in Extra EU countries, where Distributors (47%) represent the majority of customers followed by Constructing companies (26%).

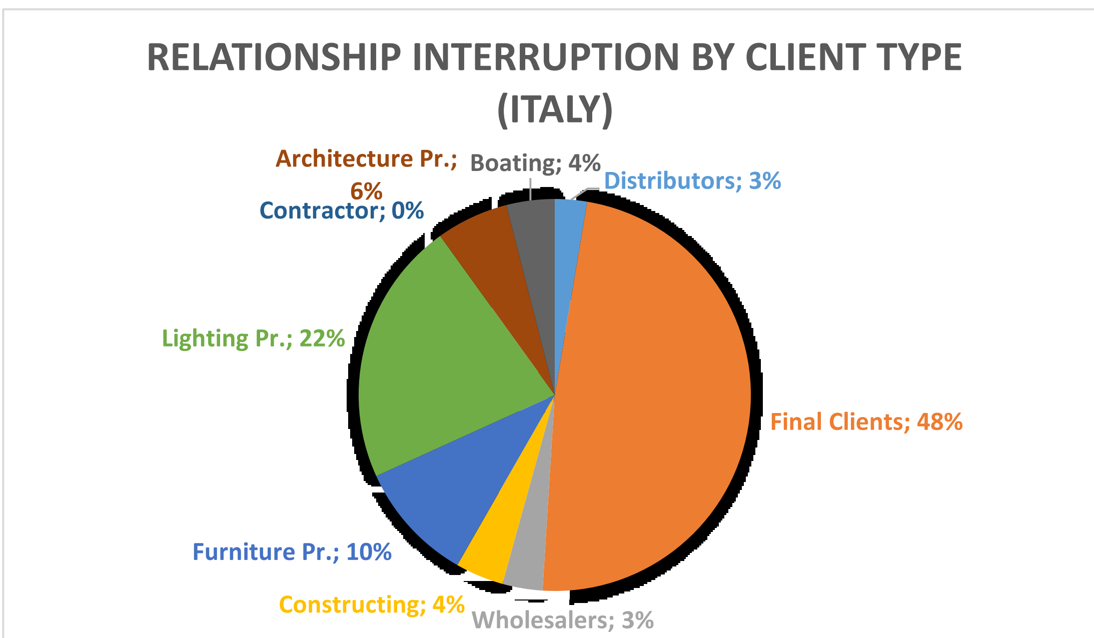
- 84% of relationships involve the sale of Cathode products and accessories - 9% Led – 7% both Cathode and Led. Italy accounts for the 96% of the relationships in the Led market and for 62% of relationships in the Cathode market. Nevertheless foreign countries account for 78% of Antrox total revenues for the period 2008-2015 (65% Extra EU). Cathode relationships are more often related to big orders.

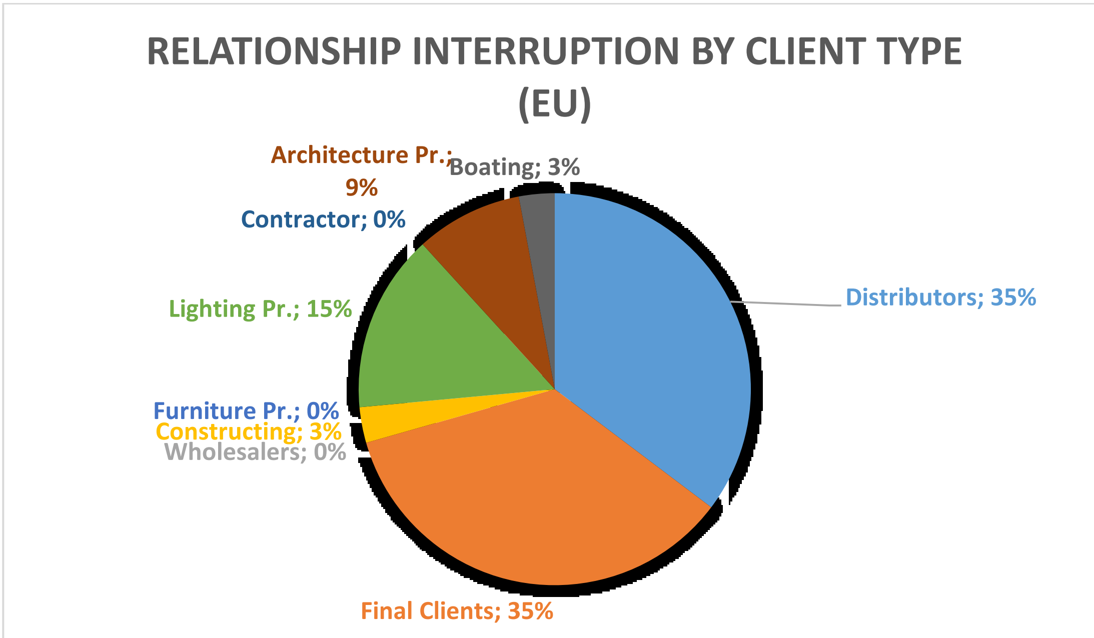
77% of the relationships did not involve a transaction in the last year (interrupted relationships). Some of these relationships are dead, some others in stand-by, others will reactive automatically in the short period. 55% of interrupted relationships never have been really relationships, but were one-time transactions.

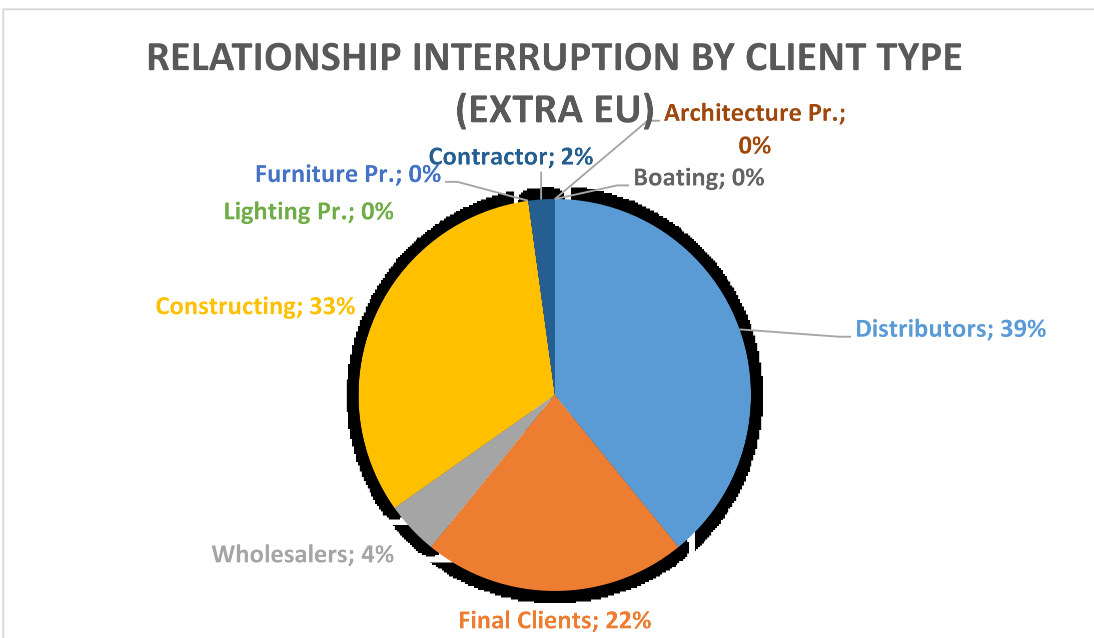
There are several reasons for the relationships interruptions:

- Because the client at the moment does not need another product (single purchases or relationships that may reactivate in the short term): 32%
- Because the client was not satisfied: 18%
- Because the client's business is over: 5%
- Because of political instability in the client's country: 3%
- Because the client changed supplier for Led products: 15%
- Unknown: 27%


RELATIONSHIP INTERRUPTION BY CLIENT TYPE (TOTAL)
Architecture Pr.; 5%
Boating; 3%
Distributors; 15%
Contractor; 0%
Lighting Pr.; 16%
Furniture Pr.; 6%
Final Clients; 41%
Constructing; 10%
Wholesalers; 3%

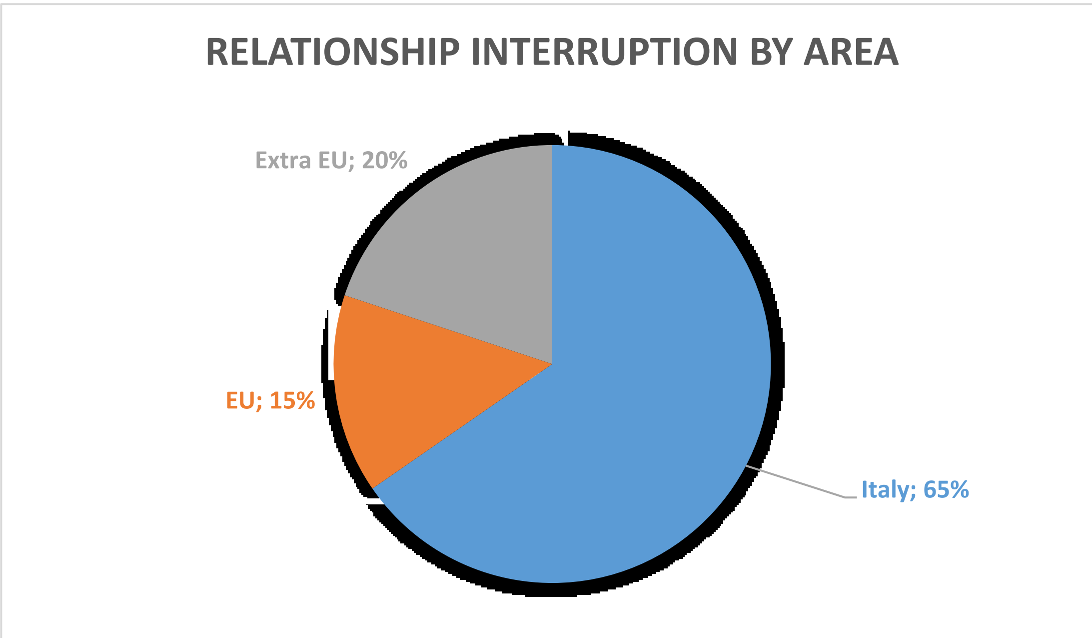

RELATIONSHIP INTERRUPTION BY CLIENT TYPE (ITALY)
Architecture Pr.; 6%
Boating; 4%
Distributors; 3%
Contractor; 0%
Lighting Pr.; 22%
Final Clients; 48%
Furniture Pr.; 10%
Constructing; 4%
Wholesalers; 3%


RELATIONSHIP INTERRUPTION BY CLIENT TYPE (EU)
Architecture Pr.; 9%
Boating; 3%
Contractor; 0%
Lighting Pr.; 15%
Distributors; 35%
Furniture Pr.; 0%
Constructing; 3%
Wholesalers; 0%
Final Clients; 35%


RELATIONSHIP INTERRUPTION BY CLIENT TYPE (EXTRA EU)
Architecture Pr.; 0%
Contractor; 2%
Furniture Pr.; 0%
Boating; 0%
Lighting Pr.; 0%
Constructing; 33%
Distributors; 39%
Wholesalers; 4%
Final Clients; 22%

The analysis of the typologies of clients that for the moment interrupted the relationships with Antrox provides some insights. Globally the main typologies of clients interrupting the relationship are final clients (41%), lighting professionals (16%) and distributors (15%). A large number of final clients and lighting professionals who interrupted the relationship concern clients that made a single transaction and therefore do not represent a big loss in the customer base. The situation is different for lost distributors, who may have changed their supplier as the market was shifting towards Led solutions and Antrox started to sell Led only in 2013. This category represent an important loss, both strategically and monetarily. Nevertheless, with some of these clients, Antrox established personal contacts of mutual trust and respect that are still valuable. Antrox should leverage this background if it wants to recover some of these relationships, as the company is now able to fulfill the distributors' requests also for what concern Led solutions.

Generally, the lost of foreign, and especially Extra EU clients is more concerning, as they often regard strategic partners, like distributors and constructing companies, which are frequently involved in big important projects.



It is interesting to notice that the majority of interruptions concern Italy (65%) and that among these, 93% regards Cathode products. Furthermore, in EU and Extra EU countries, all stoppages are of Cathode relationships. It is very clear that at the moment, relationships based on the exchange of Led products are less susceptible of customer churn.

- In 2015, the company started 30 new relationships:
    - 22 in Italy – 5 in EU Countries – 3 in Extra EU Countries

    - 8 Final Clients – 8 Wholesalers - 4 Distributors – 4 Furniture Professionals – 3 Lighting Professionals – 2 Engineering/Architecture Professionals – 1 Constructing Company
    - 53% of these new relationships concerned Led products, 33% Cathode products and 13% both Led and Cathode. The composition of emerging relationships is radically different from the one of interrupted relationships, where the Led share accounted only for a 4% and Cathode for 96%. It is a clear evidence of where the market is going.
- 83% of relationships did not present any difficulties. In 10% of the cases emerged some cultural difficulties during the relationship (especially for Extra UE countries, 83% of the cases). In 9% of the cases the relationships were technically challenging, especially for cathode products (89% of the cases).
- Most appealing countries in terms of GDP growth and Lighting Market Size, were also those in which there were cultural barriers that made the made the relationship management more delicate, like in the case of India and UAE.

According to Antrox management

- 44% of relationship have a monetary importance
- 42% are important for their network position and contacts with other actors

- 24% are important to enter the market.

For each relationship, the company's management made an evaluation about future development trajectories and about future monetary, market and network importance. The results change the picture of Antrox customer base:

- 23% of relationships will presumably be of monetary importance
- 27% of relationships will presumably be important for their network position
- 16% of relationships will presumably be valuable for market entry

Chapter 5: Case Analysis and Discussion

5.1 Functions of Antrox customer relationships.

The analysis of the company's customer relationship allowed the identification of different functions conducted by groups of clients. The classification proposed by Walter et al. (2001) was applied to the special characteristics of the Antrox customer base. As in their model, the focus was on relationship value from the seller's point of view, that is the value that the buyer brings to the seller and not the other way round. Functions were divided into direct and indirect. The former relate to *"…the transfer of value from the buyer to the supplier, without being dependent upon other (connected) relationships"* (Walter et al., 2001: 368). On the contrary indirect functions capture connected effects in other relationships. For instance, Antrox may decide to offer special prices to a client that possess an important position in the network, as it has strict relationships with other organizations and potential partners. Through this relationship, Antrox may benefit from the client's network position; this may result in the establishment of new relationships with other actors. The consequences of such a relationship have an impact in the possibility of future improvements of the company's offering to this or to other clients. Therefore, this relationship is important to Antrox because it offers a non-monetary value, which is indirect.

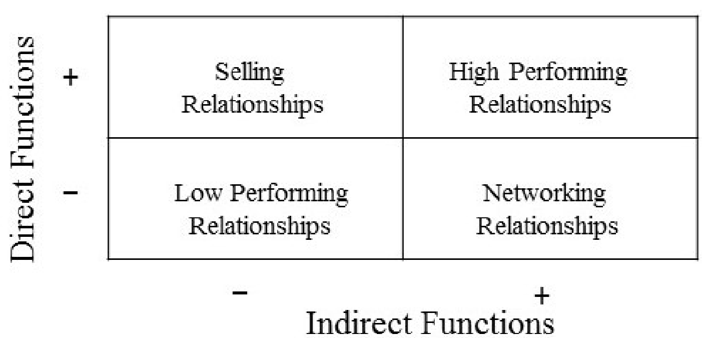
The analysis of Antrox customer base showed that some customers conduct a proft direct function. The *profit* function regards those customers that are highly profitable for the company. Obviously this group of customers is of vital importance to the company and must be managed accordingly to its status.

Differently to Walter et al.'s model, a volume functions were not performed by any customer. Indeed the authors consider that some clients may fulfill a direct function of volume, if they guarantee a certain threshold of utilization of capacities in order to achieve economies of scale, so that sellers are interested not only in the profit they make but also in the quantity of products they sale. This is not the case with Antrox, as the company externalize the production to third parties and this starts only after having received an order from a buyer. Furthermore, the company is too small to achieve economies of scale and its offering is always customized according to the customer requirements. Also the safeguard function, which is present in Walter et al.'s model does not apply to Antrox's relationships portfolio. The safeguard function regards those customers, who permit a reduction of storage costs, thanks to the continuous purchasing of supplier's products. This function does not apply to Antrox, because the production doesn't start without a buyer's order and therefore there couldn't be a reduction in storage cots.

The analysis also showed that customers fulfill two indirect functions for the company. First, a *market* function, which is when a customer relationship is important for entering into new markets. Secondly, an *access* function, which is when a relationship is important because it facilitate the relationship with other actors of the network, such as potential partners, local authorities, chambers, trade associations.

Both direct and indirect functions of customer relationships were also projected in future. Their potential is expressed as the probability, according to Antrox's management evaluation, of a relationship to conduct the above-mentioned functions of profit, market and access in the future.

Walter et al. (2001) matrix was used to classify Antrox relationships.



Low Performing Relationships are those who don't fulfill neither direct or indirect functions (64% of relationships). There may be several reasons why a relationship fits in this box. Whatever the reason, the management of the company should evaluate if those relationships have the potential to evolve in the future, and conduct any function for the company. If not, Antrox should reflect on the possibility of stopping investing in such relationships, although even low performing relationships may be useful in terms of personal contacts established. Therefore, also the information regarding those companies should be classified and stored.

Selling Relationships are those who conduct a Profit function, but do not contribute with any indirect functions (20% of relationships). The company should manage those relationships with special care, offering them good customized service in order to increase their loyalty and satisfaction. Antrox's managers should also dedicate a particular treatment when negotiating the price. Antrox may eventually try to make those relationships fulfill also indirect functions, but this is an aspect in which the firm has few control and that depends prevalently on the counterpart.

Networking Relationships are those that have an important impact on value creation in connected relationships (13% of relationships). Antrox should be conscious of this value and undertake all the actions necessary to exploit it in the network.

High Performing Relationships conduct both direct and indirect functions and are the most valuable relationships the firm has (3% of relationships). This means that Antrox has to put maximum efforts in the management of those relationships, trying to prevent any condition that may remove them to provide that value.

Walter et al. matrix was adapted, adding a potential element, which is the probability that a relationship currently with no value, will fulfill some direct or indirect function in the future. The matrix has the same structure of the one mentioned above. It is useful to develop specific customer strategies because the management of the company can compare the state of current relationships with future development trajectories. For instance, the company may evaluate that a certain high performing relationship may reduce its profit function, because of the presence of new competitors in his market. Being aware of this, the company may then try to renegotiate the deals or look for new buyers. The potential matrix is especially useful to evaluate those relationships that now do not conduct any functions, but that, for several reasons, may become very valuable in the future. Typical examples of this kind of firms include startups or companies in emerging markets. The evaluation of the potential of a relationship, allows the company to formulate specific long-term strategies and to keep investing in the relationship.

According to Antrox management, only 2% of relationships have potential to represent in the future High Performing Relationships, 12% Selling Relationships, 6%

Networking Relationships and 80% Low Performing Relationships. If we compare the picture of functions currently performed with the projections, there is a general worsening of the situation. There are several reasons for this; first of all some clients closed their businesses, therefore they cannot conduct any function anymore. Another explanation is that a good share of relationships with some customers interrupted since many years and some of them switched supplier, therefore their recovery seems unlikely. Some others are facing a difficult political situation in their countries and it is difficult to forecast for them a time of relationship recovery. Finally, in the last few years, the competition in the lighting market got more and more intense, as big international players dominate the Led market. In this context, an important condition for Antrox to reach the successes of the past, is to put more care than ever in relationships management and to develop effective CRM strategies.

5.2 Customer Portfolio Analysis reflections on CRM.

The process of CRM implementation was affected by the results of the Customer Portfolio Analysis (CPA). Indeed, the analysis of the customer portfolio allowed the company to reflect on how to improve the management of those relationships. Antrox now had enough information to decide which relationships were valuable, what kind of value they brought to the company, which specific functions they performed and which future development trajectories they could undertake. The next step was to find a way to manage those relationships in order to maximize the current and future value coming from them. The implementation of the CRM, with specific strategies for different groups of customers, was a logical consequence. CPA produced information that affected directly CRM strategies. Thus, CPA knowledge should be considered among the crucial factors that have an impact on the process of CRM implementation.

The information extracted from the portfolio analysis was inserted into the system: for each relationship, it was added the category (contractor, distributor, lighting professional…), company basic information (address, website, telephone, mail, person of reference) and typology, currently and in the future (Low Performing, Selling, Networking, High Performing). In the system were also added information regarding the country in which the client operates (GDP growth, market size, competitors' strength, cultural barriers and political stability).

For each kind of relationships, specific CRM strategies were adopted. Specifically, the management of Selling Relationships was assigned to Mr. Rinaldi who is in charge of Antrox's technical aspects. After Mr. Traferro's exit from the company, he has to become the interface between the company and these kind of clients. Being aware of the value that they bring to the company, he can negotiate special prices and offer a personalized service. These kind of clients require the best possible treatment, therefore the resources that the company invests in the management of those relationships should be considered as an investment. Examples of special treatment include personal meetings, special product customizations, post-sale visits, constant maintenance of the relationships through phone calls, emails and social networks. Mr. Rinaldi has also to constantly check the websites of those organizations and to be aware about the political and market changes in the areas in which those companies operates. For no reason Antrox has to lose these kind of relationships.

The management of Networking Relationships was assigned to Dr. Giraldi. He is the administrative manager of the company and he possess specific knowledge about the worldwide lighting market. Through the years, he gathered substantial information about foreign competitors, distributors, local regulations and authorities. He is capable of leveraging the strategic aspects of networking relationships, whether they facilitate access to foreign markets, bring innovation or valuable personal contacts. Through the CRM system, depending on the specific relationship, he can keep track of market changes, networks, alliances, and job movements. Indeed an useful feature of Insightly is the connection of the CRM with the contact's social networks, thus making Linkedin pages easily accessible through the system. To each networking relationships, a sub class categorization was assigned (market or access function). Dr. Giraldi also has to constantly monitor the changes occurring at regulatory and technological level in the markets where the relationship takes place. All those information, under the format of emails, excel files, reports and charts have to be updated into the system, in order to have a clear picture of the current state of the relationship before any deal. Dr. Giraldi is also in charge of monitoring the situation in the country in which the client company operates in terms of competitors, opportunities, political stability and economic outlook.

The management of High Performing Relationships requires the company's maximum efforts. Therefore, it was assigned to both the managers. Mr. Rinaldi is charge for the management of negotiations, customizations and post-sale services. Dr. Giraldi is in charge of the strategic aspects: screening of the market, alliances, regulations and competitive forces.

For Low Performing Relationships with a Potential to become Selling, Networking or High Performing Relationships, the same strategies assigned to current Selling, Networking and High Performing Relationships were adopted. The only difference is that these relationships were categorized into a dedicated list named "Opportunities".

For Low Performing Relationships with no Potential of improvement, no specific actions were adopted. Antrox is reflecting if it is case to keep investing on such relationships. At the moment, the management of those relationships is assigned to the administrative employee of the company. She has to insert into the system the companies' basic information, such as address, email, website, telephone and person of reference. In any case, even this basic information may become useful in the future.

The company also has to pay particular attention to Selling, Networking and High Performing Relationships that are expected to become Low Performing Relationship. Currently the company manages those relationships with the best possible care, but with particular attention to changes and unexpected behaviors that may be consistent with the company's negative forecasts. If that happen, Antrox will have the chance to react promptly to the changed situation with opportune ad-hoc strategies.

The analysis of the value of each customer relationships has to be constantly updated. In this way, the company is able to adopt the best strategies for each client and to keep track of their trajectories of development. The company can also judge if their evaluations about future development trajectories were correct and, if not, why.

In any case, reasoning on the value of customer relationships and on the best way to manage them, is a fruitful exercise, which gets the company used to think strategically about its products, its service and its competitors and to constantly reflect upon market opportunities and technological developments.

5.3 Effects of CRM.

CRM systems produce both intra-organizational and inter-organizational effects. Their outcome depends on the combination of that specific resource (the CRM system) with the other company's resources. The whole process of CPA, system implementation and the confrontation with the company's management required more time than initially planned, so that the final version of the CRM was completed only recently. Therefore, there was no time to investigate the inter-organizational effects of the CRM, which anyway will become significant only in the medium period. Besides, we can appreciate some first intra-organizational effects.

Antrox established clear patterns of management, specifically designed for each cluster of relationships. A series of actions to be accomplished were set accordingly to the phase of the negotiation: emails, phone calls, setting of meetings. Different responsibilities have been assigned to different actors, so that there is no risk of overlapping competences. Furthermore, all the relevant information regarding the customer base (emails, files, notes, purchasing history, special requests, opportunities) can be stored into the system and shared at all levels of the organization. Emails are automatically stored into the system, thanks to the integration with Antrox' email client. There is no risk of losing this knowledge if a manager leaves the company.

The CRM changed the way to store and process relevant information about the customer base, through digitalized routines, with positive effects on speed and precision on performing marketing daily activities. Furthermore the managers have a pattern of variables to monitor for countries and customers, so they can periodically check changes occurring both at market level and in the network in which the relationship operate.

Another effect is the sharing of strategies between actors, especially between the technical and the administrative manager, for what concern the management of valuable relationships. The system produced awareness of the importance of periodically monitoring important business relationships and their development trajectories, with positive impacts on the probability of catching opportunities and developing coherent strategies. This led to the creation of a customer centric culture in the organization, shared at all levels.

Chapter 6: Conclusion.

6.1 Overview of the research.

This research had two main purposes: to shed light on the process of CRM system implementation in a micro industrial company and to examine the effects of the introduction of that system into the company. In order to investigate these two aspects an action research project was carried, having an Italian micro industrial company as object of analysis.

Antrox is a micro industrial company, which operates in the professional lighting market. It sells its products around the globe. A large share of its revenues comes from abroad. After the widespread of Led technologies worldwide, the company is facing a hard competition in this market, especially abroad. Antrox is aware of the importance of its business relationships, but did not have a clear model to analyze and manage them. Especially after the exit from the company of the main key account manager, who used to manage personally and in an informal manner most of the relationships, the company lost knowledge about its customer base.

A Customer Portfolio Analysis is vital to be aware of the value provided by each relationship. There is no standard model, as the variables to conduct the analysis have to be tailored accordingly to the company's characteristics, in terms of business model, market structure, industry norms and regulations, culture, strategic goals and organizational structure. A good Customer Portfolio Analysis should be also future oriented, being capable of predicting possible development trajectories of business relationships. Maintaining all these principles, the model should also not be too complicated and should not require too much disbursement of time and resources for its usage. There is always a tradeoff between level of detail and cost to generate relevant information and between data volume and resources to analyze those data. Together with the company's managers, a model of Customer Portfolio Analysis tailored for the company's characteristics was developed. The model analyzes both quantitative and qualitative factors. The variables used for the analysis relate to client features; purchasing behavior; products exchanged; distribution patterns; relational aspects and future development trajectories.

Walter et al. (2001) model was applied to Antrox's set of relationships and the results showed that Antrox's clients conduct several functions, both direct and indirect. Direct functions concern the transfer of value from the buyer to the supplier, without being dependent upon other relationships. Indirect functions capture connected effects in other relationships. For what concern direct aspects, the results showed that 44% of clients conduct (or conducted in the past) a profit function. For what concern indirect functions, 41% of relationships conduct or conducted an access function (benefits from the client's contacts with partners and local authorities) and 24% were important to enter the market. Both typologies are valuable. Companies should not concentrate solely on the monetary aspects of business relationships, as intangible value can be of vital importance from a strategic point of view. Direct and indirect functions of customer relationship were analyzed together through matrix analysis. This led to the individuation of four categories of relationships: High Performing relationships, Selling relationships, Networking relationships and Low Performing relationships. The company's management also needed to forecast development trajectories of its portfolio of relationships. The resulting scenario showed a general worsening of the situation in the medium term. The information resulting from the CPA influenced the CRM strategies.

CRM systems can be very useful to create organizational knowledge about customers and to create mechanisms and procedures of management tailored to each group of clients. Together with the company's managers and employees, a proprietary cloud CRM system named "Insightly" was set up. After having discussed with the employees about the importance and the strategic value of CRM practices, the system was populated with basic information about customers. It emerged that the company lacked a clear pattern of management of customer relationships; everything was extemporary and depended on individual not-structured actions. The system was implemented creating categories that reflected the value provided by each relationship. Depending on the functions conducted, the management of relationships inside the CRM was assigned to different users, with specific responsibilities. In particular, the technical manager of the company is in charge of the management of Selling Relationships. He has to offer the best service to this group of key customers: he negotiate special prices, additional services and support operational marketing activities to increase their satisfaction. Antrox is aware of the value that this group of customers provides and for no reason has to risk to lose it. On the other hand, the administrative manager is in charge of the management of Networking Relationships; he has to leverage the strategic value that these relationships provide, in terms of contacts and access to markets. He has to monitor periodically the changes occurring in the market in which these companies operate and to be able to evaluate future development trajectories. Antrox has also to monitor Low Performing Relationships in order to evaluate if those may provide some kind of value to the company in the future. If not Antrox may decide to stop investing in them.

6.2 Contributions.

For what concerns the first purpose, that is to shed light on the process of CRM system implementation in a micro industrial company, this thesis provides some empirical contributions to existing marketing literature.

Antrox is representative of the Italian industrial structure, with many business-to-business companies lacking structured marketing practices and whose strategic actions are taken following the entrepreneurs' personal intuitions and experiences. For many of these companies business relationships are the most important asset, but their management is often extemporary and unstructured. This work evidenced which variables to consider before starting a CRM system. To set up the system, gaps in current relationship management practices have to be identified. An analysis of the ways in which the company interacts with customers is necessary. All the different touch points have to be mapped. The company's management should recognize which actors, resources and activities are involved in this process, as the CRM outcome will depend on how the system will interact with other resources.

This research contributes to the managerial discussion of customer information usage. The support of top management in developing a CRM system provides the basis for the system to be accepted and to start producing effects. Furthermore, setting up and using a CRM system provides the foundation for developing a customer centric culture within the organization.

This research also sheds light on how to select the more appropriate CRM system, according to the company's characteristics and goals. Pros and cons of Open Source and Proprietary system are presented; the different meanings, advantages and disadvantages of Software as a Product and of Software as a Service are described.

This work provides new empirical knowledge and insights on information utilization in micro industrial settings. This research confirmed Walter et al. (2001) model about direct and indirect functions conducted by customers. Together with the company's management, the model was adapted comparing the current situation with its potential. In this way, the company is able to compare the current functions performed by customer relationships with future development trajectories. The knowledge resulting from Customer Portfolio Analysis should be regarded as a factor influencing the CRM implementation process.

This thesis clearly shows how the implementation of a CRM system is both a technical and strategical process. It is a technical process because it affects other IT systems in the company, changing the way in which information is processed within the organization. Nevertheless, the implementation of a CRM system also means developing specific strategies for different groups of customers; it is about establishing roles and responsibilities and setting mechanisms and procedures to achieve strategic goals. More than everything, it forces the whole company to think strategically about its relationships' portfolio.

In addition, this research put a strong emphasis on the link between Customer Portfolio Analysis and CRM. Even if they are two separate concepts, they are strictly connected. CRM system may provide valuable insights for Customer Portfolio Analysis, by storing and collecting information about customers' transactions, purchasing habits and special requirements. Furthermore, CRM systems help the company in creating and spreading a customer centric culture in the organization, as they force the company to think strategically about its customers. Nevertheless, also Customer Portfolio Analysis gives an important contribution to CRM, especially in the set up phase of the system. Indeed, CPA allows extrapolating important information about the customer base composition and to the different contributions that customers carry for the organization. By developing knowledge about the different kind of value that customers bring to firm, it is possible to develop specific CRM strategies to maximize this value. The CRM system, through its use, will then generate other valuable information to analyze the customer base. Therefore, one the main findings of this study is that CPA and CRM mutually contribute to each other, generating knowledge that helps the company in strategically managing its most important asset: its portfolio of relationships with customers.

This thesis provides some contributions also to the second purpose, that is to examine the effects of the introduction of a CRM system into a micro industrial company.

CRM systems produce both intra-organizational and inter-organizational effects, but the whole process of analysis and system implementation required more time than initially planned, so that the final CRM version was set only recently. Therefore, there was no time to investigate the inter-organizational effects. The analysis was restricted to the intra-organizational effects. A first effect was the establishment of clear pattern of management for each group of relationships. Specific actions and responsibilities were set. Furthermore, the CRM allowed customer information knowledge to be safely stored and shared among the whole organization. There is no risk of losing this information (emails, files, notes, purchasing history, special requests, opportunities) if a manager leaves the company. The CRM also avoided data fragmentations, duplications and redundancies, as there is only one interface for all the system users.

Another effect is the establishment of digitalized routines that positively affect the speed and precision of performing certain activities, such as setting prices according to the function conducted by the client, sending offers and scheduling meetings. CRM also produced mechanisms to check evolving situations at market level and changes occurring in relationships that will affect future CRM strategies. The establishment of specific strategies for different groups of customers, assigned to different users, improved the leveraging of specific managerial competences and the sharing of strategies between the two managers of the firm with positive impacts on the probability of catching opportunities.

More generally, CRM led to the creation of a customer centric culture in the organization, because it forced the company to think strategically about its customers.

6.3 Limitations and suggestions for future research.

This thesis also has some limitations; due to several contingences, the final CRM system has been set up only recently, thus making impossible to investigate its inter-organizational effects. In any case, there wasn't any personal interaction with Antrox's customers; thus, also their availability to contribute to this research is not more than a possibility. Also the analysis of the intra-organizational effects should be repeated in the long term to keep track of eventual changes.

Moreover, a comparison of CRM systems implementations in other micro industrial companies may help in finding common patterns and significant differences among the setting up process. This comparison should also consider firms of different size, and operating in different contexts, making possible to investigate the effects of those two variables on the system implementation process.

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