MARKETING KNOWLEDGE MANAGEMENT IN STRATEGIC ADOPTION OF A CRM SOLUTIONS: GLOBAL SUPPORTS AND APPLICATIONS IN EUROPE

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Working Paper n. 3 – GENNAIO 2005

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Pubblicazione depositata presso gli Uffici Stampa della Procura della Repubblica e della Prefettura di Milano

Marketing Knowledge Management in strategic adoption of a CRM solutions: global supports and applications in Europe[1].

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Abstract

From the beginning of the 1990s, the business world has been talking about Knowledge Management (KM). Information Technologies (network technologies and local databases) have provided new tools to better perform the activity of using (codify and store) and sharing knowledge (modern Knowledge Management System).
Technology can help to enable greater process standardization and automation in the Knowledge Integration among the marketing processes. The first core point of this article is to identify the key areas where technology can drive greater efficiency and effectiveness on the development of the relational softwares as Customer Relationship Management.
The second key point is the analysis and the creation of a future scenario based on a KM-based Customer Relationship Management framework throughout the integration between strategic and operative supports.

Key words: Knowledge management**,** Customer Relationship Management, Marketing, User innovation; Open source software; Community; Knowledge performance**.**
JEL Classification: L86; D83

1. Introduction

The purpose of this article is to better understand which are the right using of knowledge in the different marketing processes and in which way the CRM can help this integration between knowledge and marketing management.
Before starting with the hypothesis analysis of the key factors for the right development of a KM-based CRM it is necessary to focus on the identification of antecedents and consequences of the changing management approach required during the CRM introduction and implementation.
The antecedents are, from one side, the kind of knowledge is implicated in the development of this software and, from the other side, it has to be analysed the marketing tools connected with the CRM acquisition. As consequences it's necessary to benchmark which are the knowledge processes connected with it and, as final step, in which position of the marketing information system we are re-defining the business intelligence key factors.
For these reasons the article has been divided in 2 different areas, the first one will be on the *Marketing Intelligence*, where it will be analysed the rule of knowledge in the marketing processes passing through the concepts of Marketing Information System and e-business strategy; the second one will be focused on the main concept of *Customer Relationship Management* looking at all the different Marketing Knowledge Management aspects correlated with it: CRM introduction, the rule of KM, intelligent agents using, knowledge sharing and business implementation aspects.
The reasons of this choice are because it has been supposed there is a gap between the current practice of marketing strategic functions and the support of information systems; or in other words,

[1] Paper presented in 4th International Conference –"*Marketing trends*", Paris , 21-22 January 2005, ESCP-EAP; a first version is forthcoming in Pilotti-Ganzaroli, *Marketing e gestione d'impresa*, CEDAM,Padova,2005

it has been noticed that the levels of CRM integration inside the Business processes are connected with the relationship between the right use of knowledge (f.i. codification and personalization strategy) in the different levels of marketing management processes (strategic, operative, etc.).

2. Marketing Knowledge Management

The knowledge-based view of the firm suggests that knowledge is the firm's key resource for creating and sustaining market development. This perspective raises an important question for marketers: What is marketing knowledge? We argue first that marketing knowledge resides in three key marketing processes: product development management, customer relationship management, and supply chain management. Secondly, we argue that marketing knowledge is the extent of understanding of these three marketing processes, an extent which can be measured by evaluating *awareness of factors, control of factors, and application of knowledge* in new markets. We will analyse this conceptualization of marketing knowledge and examine its relationship with knowledge itself.

Starting with the analysis the first two important questions we have to put for clarifying the purpose of this article is: "What is knowledge?" and "what is knowledge management?". Looking at the theory and in the academic papers it's possible to quote Darroch and McNaughton to have a clear idea about the real significance of knowledge: "…the process that creates or locates knowledge and manages the sharing, dissemination and use of knowledge within the organisation. When knowledge is used, learning takes place, which, in turn, improves the stock of knowledge available to the firm." (Darroch and McNaughton, 2001).

So looking at this first definition of Knowledge we can try to understand better what we mean for Knowledge Management. Effective knowledge-management practices are, in themselves, *organisational routines that are oriented toward the management of knowledge*. As mentioned previously in the knowledge-definition, effective knowledge management also enables a firm to make good use of knowledge and other tangible and intangible resources. Whenever a routine changes, innovation is said to occur (Nelson and Winter, 1982). For this reason, and the fact that knowledge in itself often contains new ideas, effective knowledge management is often cited as an antecedent of innovation (Nonaka and Takeuchi, 1995).

So now a new very important question grows up: "What is Marketing Knowledge?" and in particular: "What is Marketing Knowledge Management?"

Srivastava in the 1999 proposed a framework that redefines marketing as a phenomenon embedded in three core marketing processes: product development management (PDM), supply chain management (SCM) and customer relationship management (CRM). These processes create customer value through, respectively, the development of new customer solutions, the enhancement of input acquisition and output transformation, and the creation of relationships with market entities. The three processes thus encompass the fundamental marketing tasks that are critical to attracting and retaining customers (which are the core objectives of marketing in most business organizations). In accordance with the conceptualizations of marketing and knowledge discussed above, marketing knowledge management is defined as the extent of understanding of the marketing processes embedded in PDM, SCM and CRM. We propose that marketing knowledge can be measured by tapping, for each of these processes, three general knowledge levels: awareness of factors roughly; control of factors and application of knowledge, which requires a higher degree of knowledge.

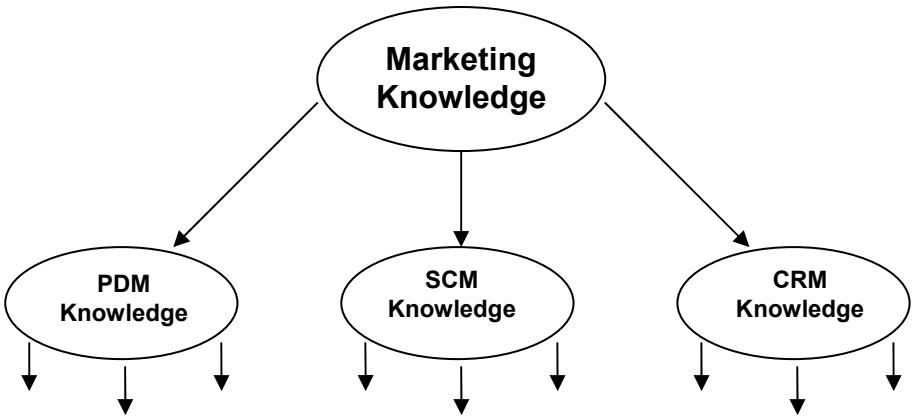
The idea of what is exactly marketing knowledge should be defined and conceptualized as "market information" which needs to be processed through knowledge acquisition, knowledge sharing, knowledge learning, information distribution, information interpretation and organizational memory (Huber, 1991; Moorman and Miner, 1997, 1998). Li and Calantone (1998) operationalized

"market knowledge competence", which encompassed customer knowledge process, marketing-R&D interface and competitor knowledge.
Knowledge is increasingly recognised within marketing management as a critical resource that can be managed to enhance the competitive position and financial performance of a firm.

Acquiring knowledge about customers and competitors and sharing this information between functional areas within a firm are key dimensions of a market orientation (Kohli and Jaworski, 1990; Narver and Slater, 1990). Resource theory, a significant influence on marketing management theory, also postulates a key role for knowledge (Fahey and Smithee, 1999).
Thus we can say that there are strong parallels between a knowledge-management orientation and a market orientation. For example, in Kohli and Jaworski's (1990) seminal work, a market orientation was defined as the organisation-wide generation, dissemination and responsiveness to market intelligence pertaining to the current and future needs of customers. Narver and Slater (1990) suggest that a firm with a market orientation gathers information about customers and competitors and demonstrates strong inter-functional coordination.

What is not clear from the above discussion is the exact relationship between a market orientation and a knowledge-management orientation. A knowledge-management-orientated firm could collect knowledge about market and non-market factors such as knowledge about some new technology for which it has no use in the markets it currently serves, knowledge from employees about their attitudes toward the organisational culture, or knowledge about internal financial issues. In this case, a market orientation is a sub-set of a knowledge-management orientation. However, the constructs could be slightly overlapping in which case a firm could be knowledge management-oriented but not emphasise the management of knowledge about the market. Alternatively, a firm could be market-oriented and not emphasise the management of knowledge about non-market factors. Therefore, in determining the exact relationship between the two constructs one must look to the types of knowledge managed by those within the firm.
We maintain that knowledge plays a critical role in innovation of market. Through a continuous dialogue between tacit and explicit knowledge, firms find new ways to solve business problems and innovation is created (Nonaka, 1994). Likewise, marketing knowledge enables the firm to better define current customers and more accurately target non-existing ones.
Besides, marketing knowledge should also provide firms with better understanding of the business environment, which will enable them to foresee the needs of potential new customers.
This will consequently encourage firms to seek radically superior products and services in order to pursue new customers, despite the risk of loosing existing ones. Additionally, marketing knowledge should enable firms to identify competent business partners so as to build capabilities. This concurs with Hamel (1998), who argues that strategy innovation can be derived by setting the right set of preconditions; marketing knowledge can be one of the preconditions that lead to more innovative ideas.

The marketing knowledge construct is conceptualized as levels of understanding ranging from awareness of business process (PDM, SCM and CRM), to control of process outputs, and ultimately to using the knowledge in the new business settings (Calantone, 2003).



From this graph we can recognise the conceptualization of marketing knowledge in represented by a second order factor structure, this structure grouped knowledge scales together per marketing process, and then grouped the three processes together to form the marketing knowledge construct. This can be interpreted to mean that there is specialization in the three marketing processes of PDM, SCM and CRM; and that marketing knowledge is an entity that requires the integration of knowledge across these three areas. The integration of these specializations is of special interest to managers, over and above the management of each separately.

2.1. Marketing Information System

There is a growing tendency of using computer based information systems to support marketing routine function; however, the application of information systems for marketing strategic function has not been well documented.

Marketing activities conventionally are centred on sales functions. This function-oriented marketing view exhibits its limitations when a company operates in a complex and dynamic environment, which requires the company to develop a capability to anticipate changing market needs and to respond to the changes rapidly via increased innovation. A new concept of marketing that focuses on managing strategic partnerships and positioning the organization in a competitive market with the aim of delivering superior value to customers has emerged (Mitchell, 1997). So we can conclude that marketing should be an organizational orientation which transcends narrow functional activities and informs all illuminates every aspect of organizational strategy and operations (**strategic support**). In short, marketing seeks to understand the changes of the dynamic market environment and to illuminate organisational strategy in order to effectively respond to changes. Additionally, but a secondary level, marketing is also conceptualized as a series of specific functional activities (advertising, product development, supply chain and so on…) which are traditionally the provide of a specific marketing department (**functional support**). An organization's strategic management process should be informed by the marketing prospective. The emphasis of the strategic role of marketing could lead to establish, build, defend and maintain competitive advantage.

Looking at these descriptions we can say that current Marketing Information System failed to support the strategic function, in fact, the application appears to concentrate on functional support, rather than strategic support. The function of "lead handling", "telesales/telemarketing", "direct mail" have received better support from Marketing Information System than the function of "competitor intelligence", "market analysis" and "campaign management". Marketing has important responsibilities for positioning the business in the market place, developing the strategy of the company and building cross-functional relationships. Working only at the functional level the database centred Marketing Information System creates a lot of data overload problems.

After a long literature compared analysis we can affirm that marketing managers perceive the marketing strategic function as very important. From other empirical research (http://www.emerald-library.com) it's possible to say that the traditional 4Ps remain the primary marketing activities, but they have not been equally performed. Other functions such as positioning, strategic planning, SWOT analysis have not been supported from the advanced of IT.

Behind a Marketing Information System there are some lacks, in particular: lack of strategic sense and vision, lack of marketing culture, **lack of knowledge**. As usual there is too much information available and the necessary skill is to find the information which is most reliable and accurate.

2.1.1. Marketing Information System (MkIS) implementation

The strategic role of marketing has not been fully recognised by some of the non-marketing senior managers. The finding suggests that developing marketing strategic vision among senior managers and articulating the vision to illuminate the marketing operation is essential to develop strategic marketing. But implementing marketing strategic function also requires cultural change. So it's necessary to identify the gap which exists between the current practise of marketing strategic function and the support of IS (Mark Lu, 1999).

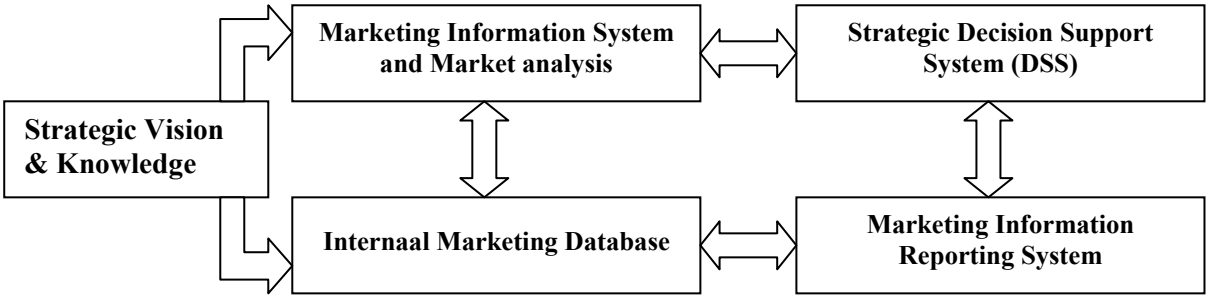
One of the reason for not using Marketing Information System to support marketing strategic function is that current system do not have the functionality to support marketing strategic activities and this problem grows up from the **lack of external intelligence**.

Market environmental factors such as market size, market share, brand loyalty, competitors, concentration of the industry, barriers to entry, market trends should be selectively identified. The core point for the functionality of the MkIS is how to convert tacit knowledge into explicit knowledge to guide organization-wide information scanning.

	Internal	**External**
Strategic Support	Trends monitoring Effectiveness monitoring Strength / Weakness New product development	Market positioning Competitors, mapping Benchmarking Opportunity / Threats Environmental scanning
Operational Support	Sales promotion Advertising Product pricing Sales force management	Market research Direct marketing Contact management Public relations

Tab. 1: Model of a strategic application of MkIS (Mark Xu, 2002):

And as J. Rowley and R. Calantone suggest the next step for new marketing era is the complete integration between the Marketing Information System and the Strategic Decision Support. So we can try to design a new conceptual model for strategic oriented Marketing Information System:



Tab. 2: Strategic Marketing Information System - J. Rowley, R. Calantone (Marketing Intelligence & Planning, 2003)

The reporting system is an essential part of the strategic oriented MkIS, as marketing managers need to be proactively, instantly informed about the changes in the market-place in order to appropriately react to the changes, rather than solicit information after a problem occurred.
So we can say that Information Technology and Marketing will become closer and closer and will in the future become indistinguishable.
A strategic oriented MkIS should emphasis external environmental scanning, processing and strategic analysis, in order to enhance marketing managers', as well as organizations' strategic sensibility and capability.

2.1.2. Intelligent systems in support of Marketing Strategy Development

The purpose of marketing strategy development is to establish, build, defend and maintain competitive advantage. Marketing strategy development needs much experience and extensive domain knowledge. Systematic analysis and strategic thinking are essential to the formulation of sound strategy. In recent years, the use of computer based information systems in developing marketing strategy has gained attention from academic researchers. DSS have been developed to assist with the formulation of marketing strategy through the use of quantitative models and analytical techniques. Efforts have also been made to apply expert systems (ES) in supporting strategic marketing by offering domain knowledge and intelligence advice. Research has investigated the application of Artificial Neural Networks (ANN) to the task of developing good marketing strategy, and use of fuzzy logic to handle the imprecision and fuzziness in modelling market entry decision. However current computer-based support for strategic marketing planning is the main restricted to the provision of relevant information from operational systems.
A large-scale mail questionnaire survey conducted by Li (European Journal of Marketing, 2002) found that, of the 104 responding marketing directors and managing directors in the UK large companies, most are very dissatisfied or dissatisfied with the computer-based systems currently supporting marketing strategy development. The supports that marketing directors need most are: *Appropriate support systems; Strategic analysis tools and models; Relevant strategic information analysis; Strategic knowledge analysis and skill assistance*.

2.1.3. The computer-based information systems

Having identified managers' needs for computer based support in developing marketing strategy and the gaps between those needs and the current provision of computer-base systems, it should be possible to develop the computer-based systems needed to satisfy managers' perceived needs for support and to fill the existing gaps. There is an interplay between the user and the computer that produces a total effort greater than the power attained by the user and the computer operating independently.

Intelligence systems represent not only the combination of different intelligent techniques but also the integration of intelligent techniques with conventional systems such as DSSs, spreadsheets and databases.
Marketing strategy development can be seen as a part of the whole process of strategic marketing planning. A suitable framework for a Intelligent support system for developing marketing strategy

should aim to support the key aspects of the main phases of marketing strategy development. The application of this framework depends to a large extent on the size and nature of the company and it's composed by: *Marketing audit, SWOT analysis, Portfolio summary, Assumption and forecasting, Setting objective, Selecting strategy*.
The use of computer-based information systems in support of developing marketing strategy has become increasingly important. In this paper, it will be argued that Intelligence systems have great potential as an effective means to support the process of marketing strategy development: 1.help strategic analysis; 2.couple strategic analysis with managers' judgement; 3.integrate diverse support technologies; 4.combine the benefits of different strategic analysis models; 5.help strategic thinking.

2.2. Knowledge Management Strategy

2.2.1. What is Knowledge?

Knowledge Management is nothing new. For hundreds of years workers have exchanged ideas and know-how on the job. But it wasn't until the 1990s that Chief Executives started talking about Knowledge Management (Nohria and Hansen, 1999).
Knowledge definition (Bohn, 1994): there are 8 levels of knowledge raging from complete ignorance (stage 1) to complete knowledge (stage 8) passing trough: Awareness of the phenomenon (stage 2), Measure of the variables (stage 3), Control of the mean (stage 4), Process capability and control of the variance (stage 5), Know-how of marketing processes (stage 6), Know why and nonlinear effects (stage 7).
Knowledge is often called the intellectual capital (years of experience) of a firm and it is also very critical. In their analysis both Badaracco and Hamel (1991) distinguish between different types of knowledge: *explicit knowledge* and *tacit knowledge*.
- *Explicit Knowledge* can be expressed in words and numbers and shared in the form of data, scientific formula, specification and manuals.
- *Tacit Knowledge* is deeply rooted in an individual's actions and experience as well as in the ideas, values or emotions. There are 2 dimensions of tacit knowledge: *technical* (know how) and *cognitive* (ideals, beliefs, values).
Nonaka and Takeuchi (1995) established a dynamic model for knowledge creation: "knowledge conversion" model where Tacit and Explicit Knowledge interact each other in the human beings. In this model we have 4 steps: Socialization *(tac to tac)*, Externalization *(tac to expl)*, Combination *(expl to expl)*, Internalization *(expl to tacit)*.
A central rule in the definition and the application of knowledge is determined by the learning item.
Fiol and Lyles (1985) refer to the organizational learning as: the development of insights, knowledge and associations between past actions, the effectiveness of those actions, and the future actions. In the Knowledge world there are two types of information enterprises: Knowledge-Intensive *(K.I. companies will produce information products)* and Knowledge-Creating *(they work directly with the clients to provide customized solutions, ex. Consultancies)*.

2.3. Cultural Aspects (Italy and the Netherlands)

The business cultural approach of a company depends directly from the type of society where this company is working in. Considering for instance 2 European countries as Italy and the Netherlands as a sample to compare the different societies and social development in Europe it has

been found that the Italian society is much more based on personal contacts and human discussions than the northern European countries. In Italy, for instance, it's very hard to automate certain kinds of customer level contacts and companies which stressed to much this automation made mistakes and they jeopardized their customers in the process. In the north of Europe people are more familiar with the automated channel to dialogue with the company and this more automated way gives to the companies 2 big helps:

1) an easier way to apply a totally "Codified Strategy" to the process (so important for a successful CRM project)
2) an easier Knowledge Acquisition (see the following paragraph about Knowledge)

Nevertheless it's incorrect to say that one market culture is wrong and one is right, they are 2 different social cultures, different contests and different histories but of course a CRM project works better and in a more profitable way (at least in a shorter time) in a Low Contest Society.

As we mentioned above the main differences between the 2 considered market are based on cultural aspects: different type of knowledge (tacit/explicit) used in different contexts (High/Low) with a different behind strategy (personalisation/codification). But the cultural aspects are source of differences and problems also inside the business processes of a single company in a precise market. In several cases a CRM project finds some obstacles to become successful not because of a wrong using of knowledge management but because the different department are using different language because they have different purposes in the developing of a customer centric application.
This Multifunctional Prospective Communication (MPC) problem is an obstacle both in a High contest market as the Italian one and in the Netherlands because it doesn't matter which type of knowledge or which strategy you are using (even if it has to be said that in a High contest communication this language problem is bigger just because most of the information is either in the physical context or internalized in the person, while very little is in the explicit transmitted part of the message). In a MPC there is a lack of alignment in the different market purpose: the IT department, for instance, need the knowledge included in the Sales Department but they talk about this knowledge using a different approach because its final goal is completely different.

The Cultural Aspect is one of the key factor in the creation and in the solution of problems not only in the Knowledge Management: one of the biggest challenge in the Change Management is to successfully shift a task/product oriented company in a customer oriented one and this big change is almost completely based on a cultural change. It's not a high-class software or a well developed IT solution that can change the approach to the market putting the customer in the middle of the companies' strategies.
Talking about this aspects we found that in The Netherlands, or however in the countries that share information through a more codified strategy, the problem is smaller because this big shift can be helped, just because the information are more codified, by a good IT approach (see the Database and Making Intelligence paragraph). In the "personalization strategy countries" this shift appears more difficult and for sure slower than the rest of Europe but in both market, to realise a success customer oriented shift, companies need a clear strategy that starts from the head of the top management where unfortunately the cultural aspects are very hard to be modified.

Another crucial cultural problem, in particular in the Italian market, is the lack of total control of the surrounding conditions. A CRM oriented company has to consider its continuous up-date CRM as the core application to manage the different relationships with its customers. The big problem is when they have to implement an old version of an obsolete module of their CRM: the top management decides to introduce the new version, they test it, they arrive at the "go-live" day that everything is well working but the largest part of the employees still support the old interface

because they are more familiar to find data and solutions. In this way the company loses the total control of the surrounding conditions and in this situation CRM can fail neither because something is wrong in the application itself nor because of Knowledge Management but because of the laziness of employees and of the lack of control by the top management.
So we can conclude that the southern countries are much more based on personal relationships between company and customers while the northern countries base their customer-business in a stronger procedure approach. These 2 different cultural approaches are both working but in a "personal relationship business" (South of Europe) the changes are much slower than on the other approach just because the knowledge is retained more in people experiences than in companies databases.

2.3.1. Different strategy approaches

As mentioned in the chapter above and looking at management consulting firms analysed in the recent academic literature (both in Italy and the Netherlands and all around Europe) let's try to go deeper in the explanation of the 2 main different approaches to manage knowledge:
Codification Strategy (C.S.): in the companies that use this approach (ex. Andersen-Consulting, Ernest & Young and Dell) the strategy centers on the computer so the knowledge is carefully codified and stored in databases. In this strategy knowledge is codified using a "*people to documents*" approach, it is extracted from the person who developed it, made independent of that person, and reused for various purposes. In this way, after removing client-sensitive-information, we develop "knowledge objects" that allow many people to retrieve codified knowledge without having contact the person who developed it.
Personalization Strategy (P.S.): in these cases (ex. Bain, B.C.G., McKinsey and Hewlett-Packard) the knowledge is closely tied to the person who developed it and is shared mainly through direct person-to-person contacts. They focus on dialogue between individuals, not knowledge objects in a database. Knowledge that has not been codified is transferred in brainstorming sessions and one-on-one conversation by phone, e-mail and so on (creating a Worldwide Network of colleagues experience).

Emphasizing the wrong strategy or trying to pursue both at the same time can quickly undermine a good business; while it seems useful to focus on one of these 2 approaches and using the other in a supporting role (except for the corporations where business units operate like stand-alone companies where both of them can coexist). But we have to keep in mind that a company's strategy for knowledge management should reflect its competitive strategy: how it creates value for customers, how that value supports an economic model and so on.

Applying a different type of strategy we will have different result for each of the following central business aspect:

- *Creating value for Customers:* using a C.S. the service offering is very clear: the customer benefits because the consultants can build a reliable, high-quality information system faster and a better price. While, using a P.S. approach, the consultants tackle problems that don't have clear solutions at the outset. They seek advice from colleagues to deepen their understanding of the issues, but in the end they must create a highly customized solution to a unique problem.
- *Turning a Profit:* companies that follow a codification strategy rely on the "**economics of reuse**". The Knowledge is contained in electronic repositories, it can be employed in many jobs by many consultants (30 per partners). The reuse of Knowledge saves work, reduces communications costs, and allow a company to take on more projects. (*Explicit Knowledge*).
  By contrast, the personalization strategy relies on the logic of "**expert economics**". The strategies of companies in this case is rich in *Tacit Knowledge*. The process of sharing deep knowledge is time consuming, expensive, and slow. It can't truly be systematized, so it can't be made efficient (only 7 consultants per partners). In this approach every new worker needs so much one-on-one

training too so for those 2 reasons they find it difficult to grow rapidly without sacrificing the customized approach and their customized offerings allow them to charge higher prices than the C.S. firms.

- *Managing People:* for the C.S. approach the different workers are implementers, not inventors; the "not invented here" attitude has no place in a reuse firm. On the contrary, in the second P.S. approach the companies want people who will be able to use the person-to-person knowledge sharing approach effectively. It means very hard recruitment (1 on 60).
  First of all we have to remember the strategy firms we saw all came to grief with document-driven systems and second looking at the 2 different strategies approach we must keep in mind that a sophisticated knowledge management system lies behind their own business model.
- *Getting the incentives right:* in the C.S. firms the level and quality of employees' contributions to the document database should be part of their annual performance reviews.
  Instead, in the P.S. companies the workers are evaluated each year on a variety of dimensions including how much direct help they have given colleagues and how was their contribute to the person-to- person system.
- *Information Technology level:* The 2 knowledge management strategies require different IT infrastructures as well as different levels of support. In the C.S. model, managers need to implement a system which must contain a large cache of documents and include search engines that allow people to find and use the documents they need. In the P.S. model it's much more important to have a system that allows people to find other people. So to choose the right K.M. Strategy a company has first to answer to these 3 questions:
  "do you offer standardized or customized products?",
  "do you have a mature or innovate product?",
  "do your people rely on explicit or tacit knowledge to solve problems?"

(Harward Business Review, Nohria-Tierney, March-April 1999).

2.4. Building a Knowledge Management System

Knowledge Management is a business process. It's the process through which firms create and use their institutional or collective knowledge. KM has been used in many ways, representing different ideas such as a computer storage systems and database mining, or management techniques similar to inventory control of parts. One of the best definition of KM is *fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information (Davenport and Prusac, 1998).*
KM is based on the development of the knowledge assets regarding markets, products, technologies and organizations but it's not only about managing these assets but managing the processes that act upon the assets too. So we can see the KM as the acquisition, sharing and use of knowledge within organizations, including learning processes and management information systems.
Trying to draw a framework for building a knowledge management system it's possible to follow three different approaches: Bottom-up, decentralized KM systems (this system put tmore emphasis on people rather than on information technology, Tacit Knowledge); Top-down, centralized KM systems (this system is basically the classic hierarchical model with a pyramid lie shape, Explicit Knowledge); Middle-up-down (this system emphasizes that knowledge is created by middle managers, who are often leaders of a team or task force, through a spiral conversion process involving both the top and the front line employees. To build a KM system the firms have to implement 5 different steps that regard all the different levels of an enterprise:
1. Identify the business problems and develop a clear set of goals and objectives for knowledge activities; 2. Create knowledge crew; 3. Adapt all level managers to the process; 4. Help the companies to change their organizational culture to implement knowledge activities; 5. Provide access to know. using networks and technologies (AAOnline, 2001).

Today's most advanced economies are totally knowledge-based. A company's knowledge management strategy should reflect its competitive strategy and competitive strategy must drive knowledge management strategy.

2.4.1. Customer Knowledge Management

Customer knowledge is an important asset for all businesses. It's at the origin of most improvements in customer value. Vendor of CRM and business intelligence solutions claim that the data collected at the customer interface can be translated into business intelligence and customer knowledge. In the e-business the interface between the customer and the business or organisation is mediated by a computer. This means that every transaction, and every bit of on-line behaviour and dialog can be recorded. Appropriately analysed this data holds promise as a rich source of business intelligence (Journal of Knowledge Management, 2002).

Knowledge management is concerned with the management and exploitation of corporate knowledge. Customer knowledge management is concerned with the management and exploitation of customer knowledge. There are 2 types of customer knowledge:

1. Knowledge about customers (K.M. about potential customers and customer segments)
2. Knowledge possessed by customers

The focus of this article is on the first of these (although the second is very important in on-line communities.). According to Davenport (and other authors) K.M. and C.K.M. features 4 interdependent strands: *Knowledge repositories; knowledge access and knowledge tools; knowledge cultures; knowledge assets.*

Knowledge Management is concerned with both people and systems, and it's important to understand the link between knowledge management and organisational learning.

Rowley and Slack identify four different categories of consumer behaviour research: Cognition, Customisation, Cumulation and Context.

1. *Cognition*: Customer behaviour in relation to Web sites and marketing communication, as the basis for the evaluation of the effectiveness of these marketing interfaces.
2. *Customisation:* Development of customer profiles as a basis for customization and the development of one-to-one relationships with customers.
3. *Cumulation:* Trends in customer behaviour and other aspects of market analysis that inform the strategy directions of the e-business.
4. *Context:* The relationship between consumer behaviour in the traditional and e-marketplaces. The effect of on-line consumer behaviour on other channels and vice versa.

In general customer knowledge is an important element of the feedback loop that influences innovation and design and evolution of the market of e-business.

It's important to appreciate that customer data can be collected through a number of different avenues:

1. *The customer provides information in response to a request for the information* (traditional and electronic data)
2. *The customer provides information about themselves during engagement in an on-line community;*
3. *The customer provides information as a by-product a transaction;*
4. *The customer search path can be tracked* (Cookies, log-files, IP addresses and so on);
5. *The merchant uses cookies to keep track of the customer's actions.*

In addition to these avenues it has to be considered also other 3 important key factors:

- the challenges for translating data into information and knowledge. This challenge is to convert customer data to knowledge and to use this knowledge for the future development of products, marketing directions and strategies. Data warehousing and data mining techniques can be helpful in structuring data and may be used as the basis for database marketing techniques. Such database

are at the core of a marketing information system, and marketing decision support systems that can provide information to support decision making and Customer Relationship Management. (www.crmcommunity.com/library/fundamentals);

- the on-line customer communities that are viewed as one approach to building successful business models. (Knowledge exchange). The literature on knowledge management emphasize the role of teams, and virtual teams in sharing knowledge across global enterprises. In the context of knowledge management, online communities pose two challenges for business:
  - How best to capitalise on the data, information and knowledge that is shared within the community;
  - How to manage the community and define a community culture that maximises knowledge sharing.

These challenges include both B2C and C2B relationships as well as C2C and B2B relationships;

- trust is the commodity that makes people and organizations comfortable and prepared to do business with one another. Trust builds with transactions and interactions but a key element of trust relates to how the business uses customer information and knowledge. Some authors argue that in the on-line environment the customer has power, since they can exercise some control over the data and information that they provide about themselves, and indeed decide whether to engage in the relationship in the first place. In conclusion there is a dynamic relationship between knowledge ownership and power, that needs to be mediated by effective management of issues that affect customer trust and willingness to provide accurate personal data, information and knowledge;
- virtual organisations. Arguably the most interesting question associated with knowledge access in the e-business environment is the extent to which suppliers and customers are allowed access to the knowledge assets within the organisation's extranet. Virtual organizations are viewed as one model for alliances in fast moving and turbulent business environment. Virtual organizations need to features speed, flexibility and fluidity, sometimes described as agility.

Typically a virtual organization is a temporary network of independent companies, including suppliers, customers and sometimes erstwhile competitors, linked by information technology to share skills, costs and access to one another's markets. Such volatile organisational structures pose a number of challenges for knowledge management:

1. knowledge management can only be implemented fully with intercommunicating systems and integration between e-business interface (customers) and the information systems (business processes);
2. the formulation of policies on knowledge sharing between member organisations and sole use accesses;
3. defining the boundaries in respect of knowledge repositories;
4. creating a knowledge based culture
5. managing knowledge assets on the demise of the virtual organisation.

Lastly we can affirm that the Customer Knowledge from the e-business domain is very full of very important element which are each other correlated. But, looking at the just explained framework a spontaneous question rises: "How can customer knowledge from e-business be integrated with customer knowledge from other channels?

The answer to this question depends significantly upon the way in which knowledge based activities are embedded in business operations and transactions. The companies need to consider the purpose for which customer knowledge is required, and consider the appropriate level of integration of systems to deliver the kind of customer data and knowledge that are necessary.

So we can say that the dynamic nature of both knowledge about customers and the knowledge that customers possess suggests that the management of customer knowledge requires innovative approaches. Ventkatraman's approach to strategy reminds us that *knowledge is retrospective*. Customer knowledge repositories are history, and the more volatile the customer-base the less valuable the customer knowledge. He suggest that strategic vision for e-business should be viewed

as a continuous cycle involving building on current business models, and creating future business models through selective experimentation. In this model knowledge management is interwoven with business transformation. Through this "new" KM-based approach, customer profiles become less necessary, and the business capitalises upon the customer's own knowledge.

2.5. Marketing Intelligence (MI)

Implementing an already existing strategy is not an easy task for industrial organizations but it's necessary because firms today will not exist without a clear strategy direction. Regardless of company size, the planning process is the same. This process is a clear continuous process driven by market strategy that is dictated by customers and the portfolio mix of the customers. One of the drivers of both strategy and success in the marketplace is the role of *market intelligence*.

All business have strategies, which are the methods used to make and sell products or perform services. Often, strategies are determined by a company's reaction to events beyond its control rather than by solid market intelligence and strategic planning.
But the question asked is "why do firms plan?" and the answer is simple: *competitive advantage*.
In order for companies to maximize opportunity, they must first assess their strategic position. Only then will management be able to decide where and how the company should position itself. Evaluations of past performance, marketing strengths and weakness, reputation for quality products, utilization issues and mission need to be addressed by strategic planning and good marketing intelligence. If a company utilizes marketing intelligence systems, the output can result in sound marketing decisions which can be one of the best sources of competitive advantage.
Marketing Intelligence provides a meaningful input by providing firms with information that allows for sound decision making. The goal of business is usually clear: maximize profitability and ROI.

The value of a marketing intelligence system can be substantial since decision making regarding strategy has a direct impact on the bottom line. If the intelligence system provides timely and relevant information, then the value added by the system can be measured in terms of risk aversion. Minimizing risk and maximizing profit are a natural extension of the system. A basic tenet can be drawn that MI adds value to strategic decision making and its importance has not diminished. In a survey of a cross-section of 50 consumers (industrial and service firms) it was discovered that many companies recognize the critical connection between strategic planning and MI. Companies that realize the advantages to be gained through MI usually have a strong foothold in the market in which they operate, depending on the quality of the data and consistently updating the data.

Another important aspect to consider in the Marketing Intelligence area is the using of enabling technologies as Intelligent Agents and XML language. Let's see more in details these two strategic IT issues:

- Intelligent Agent are useful in automating repetitive tasks, finding and filtering information, and intelligently summarizing complex data (Murch and Johnson, 1999). Just like their human counterparts, intelligent agents can have the capability to learn and even make recommendations regarding a particular course of action. So Agents can be thought of as intelligent computerized assistants.
- ***XML*** (Extensible Markup Language) is emerging as a fundamental enabling technology for content management and application integration (Goldfarb and Prescod, 1998). XML is a set of rules for defining data structures and thus making it possible for key elements in a document to be characterized according to meaning. It's also possible to say that XML enables us to build a structure around the document's attributes.

We contend that by combining intelligent agent and XML technologies one could envision a knowledge management environment that supports all phase of the knowledge life cycle (creation, organization, sharing and distribution).

2.6. Business Intelligence and Human Brain: the new marketing era

Some companies in the Netherlands formulated a kind of "data strategy" to define customers' groups. In this strategy is mentioned many time that, to create a real useful segmentation of your market, you need to add intelligence to your system but this intelligence is not given from some types of advanced Business Intelligence application but it's in the minds of managers and employees: every system can give you data about customers but if these data are not interpreted by humans they are completely useless not only to create future trends or scenarios but also for the daily work. In this data strategy is also quoted that "data are not relationships with customers, data are data, to create a real relationship with clients a company needs much more, it needs a human interpretation of the data, a human feeling and a human analysis, this is the intelligence that you are looking for".

The Business intelligence given by the application in the attempt to create a scenario planning is made by the combination of client intelligence (intelligence about customers) and marketing intelligence (the intelligence of the "outside": governments, society and other general trends). A company has to compare the result of the Marketing Intelligence with the Client Intelligence and then trying to define the gap between the 2 results.

If this technological advanced solutions will be combine with human creativity and intelligence a company can create a real advantage in the market place.

So, as we mentioned above, the "Intelligent part" of the project is becoming the most important and strategic part of the whole process and companies are becoming more and more dependent on one side from the facilities and the tools of the suppliers who offer this advanced applications and, on the other side, from the department that are able to combine the strength of these solutions with the human intelligence of employees to forecast a more and more precise and detailed future business scenario. So this the biggest risk now: to give the power of the future trends analysis in few hands and even some of them are not inside the company as suppliers or external consultants. But in the 2 countries we don't have the same step of intelligence evolution. In Italy only the minority of the companies that are using CRM apply massively Business Intelligence tools and only few of them finance scenario planning activities. For example in the Italian market concepts like intelligent data sensor or intelligent agents or easily XML are quite unusual also among people who work in the Business Intelligent department, when it exists. A lot of companies don't use any Intelligent solutions or intelligent tools just because they don't know anything about that. In Italy the scenario planning that we are talking about is made only by the experiences of the old marketing managers or, even worse by the stories of the oldest sales managers.

In the Netherlands the situation is different, intelligent solutions are applied and, more important, at least they are well known by the majority of the people who work daily with CRM applications and organization strategy.

We found that the Netherlands and Scandinavia are very on the same level in the development and in the application of Intelligent solutions in the market. Italy and Spain are a little bit late in this high-class solution but they are developing very fast.

Since when the CRM application was introduced in the market as a new concept to manage marketing processes and customer service it has been possible to distinguish 2 stage of marketing:

1. the first one is the marketing that everybody knows, it's the marketing based on the 4 P of Philip Kotler and it is a kind of logical approach to the truth. The base of this the process is physics, it's the reality and you describe the truth with super formulas. It's a kind of economical model trying to define the truth and if the truth doesn't follow the model the truth would be wrong. So in this first step we can define Marketing as a kind of "child of economics" and the truth is not following the type of conditions that economy in general and marketing in particular trying to describe. This approach is perfect for some academic studies but in the reality doesn't fit quite well especially when you need to make some predictions with the data you have gathered.

2. since 8 years ago more or less a new concept of marketing has come. This second stage of marketing is tracing what people apparently do and then reasoning and acting from that. In this "new marketing era", as P. Postma defines it, the marketers understand that people have their own system of thinking , their own neurological system and their experiences and that it's quite hard to fit all these variables in the old marketing models where the predictions were based on what people were saying about their habits and not about what they really did. This second era, based more on the technology than on the academic rules and theories, is much more able first to trace and, as a direct consequence, to predict consumer behaviours with a higher degree of accuracy.

At the beginning of the CRM using, companies had the technology to pass in the second step but they still approached the market following the issues of the first stage. In this way they applied mass customisation tools as big mailing list or long list of calls with a retention percentage very very low.
After this first step that in some markets is still working (in particular in some companies of the southern countries of Europe) some big companies with a long life term of relationship with customers (banks and insurances in particular) started to give to the traditional marketing a marginal rule in their core-business and to put the "second stage" CRM marketing era in the center of their processes.
The path they used was to build intelligent databases based on the part of the brain that leads our human behaviour. So they started to apply neurology and marketing at the same time into the databases and the first step to make this was to based their data not on what people say about their habit but only on what people were doing and buying. Differences are significant.

The banks' sector is maybe the most advanced one in the using of CRM and customer oriented application. They are able to segment their customers in a very high precise and detailed way creating different groups based on the high quality data they have in their databases.
Thanks to this segmentation some banks are able for example to route the call path of a customer on the base of its profitability: if this customer has a very profitable rate for him it will be very easy to have an operator or an expert at the phone. But how does it work exactly this system? These companies use a free number where every single customer has to make its call recognisable by a customer account number. Since that moment the CRM system has been starting to route the call.
With the using of an account number, in fact, the system takes all the relevant data that belong to that customer in order to have all the key information on the screen when the operator is answering to the routed call. So rendering the system net-margin sensible it's possible in the way of routing all the CRM activities in a cost based way and for example, talking about call center, it's possible to offer the right consultancy to the right customer: for a profitable one it will be very easy to find an expert about that problem, for a not profitable one it will be very hard to go out of the call center operators' system.

3. KM-based Customer Relationship Management

The relationship between knowledge and innovation lies at the core of competitive advantage. (Nonaka, 1994). Hal *et al.* introduced "innovation" as a mediator between market orientation and performance, but such innovation was conceptualized as organizational innovation. Through a continuous dialogue between tacit and explicit knowledge, firms find new ways to solve business problems and innovation is created. Likewise, marketing knowledge and to be more precise KM-based CRM enables the firm to better define: current customers, target non-existing ones, business environment, foresee the needs of potential new customers, superior products, competent business partners and setting the right preconditions. So let's see what's KM-based CRM domain.

Customer Relationship Management CRM is about managing customer knowledge to better understand and serve them. It is an umbrella concept that places the customer at the center of an organization. Customer service is an important component of CRM, however CRM is also concerned with coordinating customer relations across all business functions, points of interaction, and audiences (Brown, 2000; Day, 2000). Delivering consistent service across all touch points gives companies a strong market advantage. When information or knowledge is fragmented within a company, customer feedback is hard to obtain. As a result, customer service suffers and organizations fall back on the mass marketing principle that 'one-size-fits-all'. One-to-one marketing requires a comprehensive view of customers' needs and preferences (Kotler, 2000). Information technology-driven relationship management by a firm focuses on obtaining detailed knowledge about a customer's behaviour, preferences, needs, and buying patterns and on using that knowledge to set prices, negotiate terms, tailor promotions, add product features, and otherwise customize its entire relationship with each customer (Kohli, 2001; Shoemaker, 2001). Offering customers convenience, personalization and excellent service plays a key role in the success and differentiation of many online businesses (Kalakota and Robinson, 2001). CRM focuses on providing and maintaining quality service for customers by effectively communicating and delivering products, services, information and solutions to address customer problems, wants and needs. In the main sense of the acronym, CRM is an application suite usually consisting of three types of interrelated "tools":

- *Customer Interaction Channels*
- *Front-Office Applications*
- *Back-Office Technology*

Sales Force Automation (SFA), electronic data support for sales staff, was one of the first CRM-tools in the market. An average CRM suite currently involves 5 application modules: *applications for Computer Telephony Integration (CTI), Campaign management, e-commerce, data mining and predictive modelling*. All these applications are linked to the core of CRM technology, a central client database or corporate level data warehouse, that delivers the same reliable and instant information about clients to any employee in the company.

In the broad sense of the acronym, CRM is an ICT-facilitated corporate strategy that puts the primary focus of the company not on the corporate process, and not even on the production of products and services, but on the customer. CRM-technology and the strategy to align the organization with the customer are related to the extent that it's almost impossible to consider one without the other.

In addition to this concept we have to consider that companies nowadays don't just compete on their own, but as a network or "family" of organizations (Pralahad & Ramaswamy, 2000). The competence of companies is a result of the collective knowledge of the entire network or "open system". The competence of clients as part of this open-system approach is a relatively new resource, especially valuable to service-oriented organizations. In service-oriented companies it seems more accurate to study the division of the business work among three distinctive groups:

1. back office employees with very little contact with clients
2. front office employee in frequent contact with clients
3. and the client themselves (Larsson & Bowen, 1999).

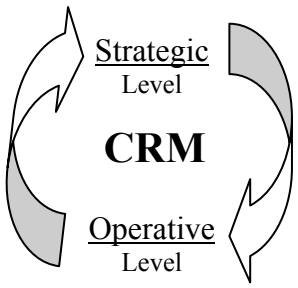
Following this new approach it's possible to say that some of the technology companies are essentially turning their customers in a more and more important part of their support staff.

This is one of the most revolutionary aspect of CRM: a totally new rule is assigned to the customers in the economic-business processes. (Pralahad, 2002)

In other words the using of CRM force a redesign of the corporate policies from a *product-process oriented* company to a *customer oriented* one.

3.1. CRM implications

The basic premise of a CRM strategy is to treat different customers differently. This benefits the company and the customer. Marketers can determine how and when to communicate with customers by using data analysis such as segmentation, affinity modelling and profitability analysis. When incorporating customer preferences, and creating relevant and timely communications, the marketing department will develop a continuing dialogue with their customers and improve their marketing effectiveness. Research on this issue will cover strategies and supporting technologies that will help the enterprise create and stage intelligent communications with its customers.
When implementing a CRM strategy, leverage real-time techniques to deliver stronger intimacy and greater relevance in customer interactions - but don't sacrifice quality of response for speed of response. When approaching the real-time enterprise, it's common to focus on processes and technologies that will drive internal efficiencies. However, consider customer-facing processes and applications that can be used to reduce latency in how you interact with customers. Use real-time techniques to achieve a stronger sense of intimacy in your customer relationships, and ensure that your offers and interactions deliver greater relevance to the customer.
The Internet has enabled the greater availability and visibility of information. For marketers who frequently depend on an extended network of suppliers and distribution partners, an emerging set of Internet-based applications will enable more-efficient and more-effective communications between partners, while also improving the value network's ability to market to end customers. To best meet the needs of specific customer segments or individual clients, marketers must become more adept at understanding and joining together the complementary strengths of different partners. Although these processes must be sufficiently standardized to be manageable and measurable, they also must be inherently flexible and dynamic to best meet unique customer requirements. But it's important to remember that for deploying customer and supplier relationship management applications requires change management. As it's known a CRM application software works in 2 different level:



A customer relationship management (CRM) strategy requires tangible and intangible investments. Software is one of the largest components of the "hard" financial investments, Companies looking to ensure that they are extracting all potential return on investment (ROI) from their CRM investment must examine the software investments they have made.
When you embark on a business application project, you often reach an interesting fork in the road. (Bose & Sugumaran, 2003) After you've developed a strategy, refined your vision and overhauled your processes, you reach a point where you have to figure out how you're going to bring technology to bear to address your specific business requirements. So the enterprises choose a different kind of implementing strategy depending on which type of adopting technology they are:
• Type A enterprises (*pioneers*) are technology-driven and are often willing to risk using immature, cutting-edge technologies to gain a competitive edge.
• Type B enterprises (*mainstream*) are moderate technology adopters, implementing new technologies once they have proved to be useful and have entered the mainstream.
• Type C enterprises (*followers*) are technologically risk-averse and cost-conscious; they are usually among the last to adopt new technologies.

Independently from which kind of strategy the enterprise decides to follow it has to become a customer-centric enterprise, shift its perception of CRM from matching products with customers to customer needs and value. Creating the right balance of satisfying customer needs vs. customer profitability means using strategic and increasingly dynamic tactical segmentation schemes.

3.2. CRM misinterpretations

CRM is not ICT! (Peter de Bruin, 2003). And CRM is not even more things. Although CRM can create enormous improvement in the effectiveness of commercial activities, it is by far not a cure for all diseases. CRM could go down the drain as looked upon as hype when managers are expecting too much from this phenomena. While, if treated and implemented sensibly and in the right context, CRM cannot any longer be eliminated from the daily marketing arena (Winer, 2003).
Everywhere we can read that customer intimacy forms the base for CRM. And that is so logical. How else could you build a relationship with your client, sustain and expand, if you cannot crawl into the customers' skin to really learn to know, understand and to predict the desires, wishes etc? Because every 'kick-off' of a new CRM project starts by referring to customer intimacy and every book about CRM mentions this as starting point, but it's definitely not true that CRM guarantees customer focus. *It's the marketing management that has to lead a right using of the CRM for all the different kind of customers*.

Another wrong consideration is to consider CRM useful only for company with a very large number of customers. CRM is also mainly used in environments where one is trying in large numbers to approach more or less anonymous customers at a more individual bases. Modern IT solutions like data mining made this possible. A good example is the almost one-to-one direct marketing approach made by many companies. So it is a misunderstanding to assume that CRM is only useful for companies with thousands of customers. Company which has a small number of (regular) customers, is much more able to act on a one-to-one approach.

But it's wrong to consider CRM applications only for end-users (family households or consumers). A company can in some cases be considered as end user too. More and more CRM suites are getting popular in B-to-B environments. It's mostly because many companies do not deliver directly to the end user but via wholesaler, dealers, agencies, retailers or whatever resellers, so who can be identified as the customer? The answer is that both the end users and resellers are to be considered as being a customer (multiple target approach).

Lastly, the biggest misinterpretation about CRM is to think that it's restricted only to the marketing department. Sometimes it looks like that: CRM being an esoteric toy of marketers and IT people, who like gold diggers dig in data warehouses, looking for golden clients, and doing that talk in a non-understandable manner (Bose, Sugumaran, 2003). Then CRM becomes a very technical issue, where the client cannot be found anywhere. Of course, in those brilliant CRM project plans there is a chapter on 'people and cultural changes' to be found, which actually comes down to a few days of training for the telephone operators and the people from customer services.
Unfortunately this is completely misses the real issue: long term individual client satisfaction and client loyalty, based on superior client focus throughout the whole organization, supported by smart procedures and systems. Maybe it is an old fashioned expression, but it shows the precise essence: servility, with all client interactions. Marketers and IT people are the ones with the least client contacts. Client focus should be upgraded with telephone operators, stock clerks, drivers, engineers, sales, employees, finance department, service operators etc.

3.3. CRM project development: 3 waves

At the beginning of this research we found that in the Netherlands the word CRM is not anymore so "fashion" as in Italy. In a first step we thought it was because of the high percentage of failures in CRM project but after the first qualitative analysis of the market we discovered it was only a different temporal interpretation of the acronym itself.
Let's explain what we are talking about.
Five years ago more or less the Dutch market started with a mass introduction of CRM in a lot business projects and as it always happened at the beginning of this project the first focus was on the IT applications and in particular in the creation of big databases where, as if they were magic tools, all the secret about customers' behaviours would had been clearly and easily found.
As everybody can understand it was the beginning of the hype that created so many project failures.
So, in the northern countries of Europe, with the acronym CRM they think about the big hype and its dramatic consequences so, for them CRM is over.
But it's not true, in fact, right now they are developing a second step in this kind of customer centric application and it's still CRM. Analysing the 2 market we have found three possible different phases to define the different steps in the developing of the application and the system:

- The first phase is completely passed in countries like Holland but it's still alive in the southern countries of Europe. This first step consists in the creation of bigger and bigger databases where all the data are put inside without a clear process and then using Data Mining solutions the company tries to find some patterns in the data and trying to catch the first purpose of the process to define customer profiles.
  A lot of companies have already different databases for different channels, one for the web-site, one for the call center and so on. Now they have understood that to create this customer profiles they have to combine all the data and create a final dynamic database.
  The problems of this first step are both in the quality and in the typology of data they are acquiring: the quality it's very low. In this way the result of the their customer analysis process it will be to discover what the company already knew.
  This approach was massively used in bank and insurance markets where, crossing the data about customers, it could be possible to predict some consumer choices.
  Dutch companies spent a lot of money in this first step but the ROI was always very low, too low for the first business expectations. In the Italian market this first "wave" is still in use at least in the companies that decided to introduce CRM starting from the operational/technological side.
  In particular in the southern countries it's possible to see companies have still big problems to make the transition between transaction based database and relation based one. In this first wave in fact several companies thought that it was enough to apply a CRM system to have this transition already done. They were focusing on how to combine the different internal database in a more efficient one without regarding that few managers inside the company really knew what is a relational database. So if the person that is supposed to make the big transition is still reworking on the base of transaction data how could be possible to manage this transition?
- The second wave is more focused on the integration among the 5 channels from which companies are acquiring data about customers:
  web sites;
  call centers;
  regular mails/papers;
  e-mail;
  shops.

  So far, in the majority of the companies, these 5 channels are partially or completely disconnected. When customers go to the bank-shops, for example, the employees don't know the

regular paper situation of them or if they made a special e-mail request last week or if they filled the web-site form to have some information about a new product. So these 5 channels work in a complete separate way and the only connection among them is to put data inside a big database.
As someone can imagine the Dutch market is already approaching this second CRM phase while in Italy it's planned to be applied to the mass market in 1 or 2 years (except for some top developed companies: e.g. Vodafone Italia). The idea behind this second wave is to make customers feel more at home, more connected with the company without receiving the news that: "sorry but you called the wrong department" or "sorry, you sent the letter to the wrong department" and so on. It's all very frustrated both for companies and for customers and in particular in the Netherlands companies have understood that if you don't really connect all these channels each others you will never start to make money from CRM.
So in this second phase the whole business chain is focusing on combining all the different information channels to make sure companies have only one complete customer profile in their own databases and every employee has the same real-time information in the screen regardless if it's somebody from the call center or from the shop or wherever else.
Unfortunately they don't call CRM this second part because every company is working in a very personalised level to combine in the best way their own channels and so every business market focuses its attention on different up-grades, different customer solutions and so on.
But the concept it's still a CRM concept because as we quoted above: CRM is not a system, it's a business philosophy.
We could call this second phase the "Channels Integration" wave.

- Then we will have the third wave.
  In some countries they are already starting with this (UK and US) and for the majority of the analysts in the rest of the most developed countries (e.g. the Netherlands) it will happen in 2/3 years, even if some Dutch companies are already starting with this approach. So first we had the creation of big database with low customer data quality, then there was the "Channels Integration" wave and as the third one we will discuss about intelligent marketing analytics and neurological database organization.
  So when you have the third step well developed in your place you will really create the famous "CRM wheel" because you will exceed your customers' expectation in the customisation of the service you can offer and as a matter of fact they will give you back more information about themselves because, as for the employees, everybody will be glad to offer information to a system/company that exceed your personal expectation: in this way the CRM results will perform better and better.
  So we can define this third way as the moment when a company with a well working customers database and with a high integrated channels will start to see real brilliant results thanks to the application of high-class softwares that monitor, analyse and manage all the different information about customers that the system receives from other databases or external/internal consumers behaviour analysis (f.i. talking about the market of banks the credit card tracking analysis) or normal letters or e-mails or call canters or, as a last and more difficult step, from the direct dialogues with their customers. So if everything is completely integrated in a well working database then you can apply these intelligent softwares that analyse all the input data and give you an output forecast analysis.
  Following this procedure a company can reach a level of customisation that can arrive at a personal level with one-to-one direct offers.
  Then after the application by the Sales Management of the suggested solution by the system, a third way CRM generation is able to arrange a new "forecast percentage of buying" looking at the success or at the failure of the past offers. In this way all the solution are balanced in "real time" and the percentage of success becomes higher and higher. So the real different between the

Business Intelligence applied to the first and second wave is that the range of statistics analysis are in some way “real-time sensible” to the customer responses.

From a first look at these 3 different waves, the first aspect that stands out is the almost total absence in the mention of strategic approach.
The 3 waves are correlated only with the CRM system (analytical and operational part) and not with the CRM strategy. For the first time since the beginning of this article we are focusing only on the IT: as a matter of fact, in the developing of the operative system, the IT is the real key factor.
This is because, even if to be successful it needs a deep strategy, CRM would have a very large technological impact and, in particular if a company has a very large number of clients a CRM application cannot be developed without a very (sometime huge) technological help.

In the last 2 waves, that it means since 3 years ago, in Netherlands several companies have combined Data Cleaning Softwares with CRM. The purpose was trying to work only with significant data deleting the extra useless information. In Italy these solutions have just started to be considered by companies but in the next 1 or 2 years they will become very popular in fact, looking at the IT forecast for the next 3 years, customers data grown up 5 time faster the capacity of micro-chips, so the data explosion are much bigger than the process capacity. So companies will start to store in their databases only the data that they consider really significant for their strategies.

3.4. Global Product Support

How will enterprises select customer service and support technologies and applications that most effectively support their evolving customer service strategy? (A. Bona, Harvard Business Review 2003) This is one of the most important question to apply a general relational software (CRM in the specific) in the right way from the beginning.
First of all it’s very important to consider the concept of "global support". It refers to the central organization, either virtual or physical, that provides services, either internal or external, to customers in need of technical assistance or support, 24 hours a day, every day of the year, around the world. Secondly it’s necessary to analyse which type of support model works best for a global product (which can present a local-language support requirements). There are two models that work best in different scenarios:

- The "*follow-the-sun*" support model. Under this model, the enterprise will set up different service and support centers around the world, in areas where the enterprise has a local presence. These service and support centers will ensure that the enterprise can provide 24-hour-a-day support around the world, leveraging the different time zones.
- The "*local office*" support model. Under this model, the enterprise will set up different support centers in the locations where it has a presence, and the centers will provide the clients in those regions or areas with support, as needed. Under this model, each office is independent from the other offices in operations, but the secret to their success will still be sharing information on service and support through a centralized knowledge base.

The first model is more appropriate in situations where the enterprise has multiple clients that require support around the clock. This is traditional in mission-critical systems or in systems that have a large customer base. However, when the client base is not large or the need for critical support is not high, having a system like this will be more expensive than having to support multiple smaller, cheaper local offices and systems.
There are two issues that apply to providing localized language services. First, you must select a "standard" language for your support operations. This has traditionally been English, but any language that can be supported by your enterprises. will be fine. It is easier to support a standard language for off-hours operations, and local-language support during business hours.

- One more model that is beginning to emerge is a hybrid of these two above: *localized, follow-the-sun support*. In this model, enterprises implement three shifts, to cover the 24 hours in a day, in a central location and provide local telephone numbers in the different regions where their clients reside to create a global support model that targets their needs, while maintaining the central aspects of the follow-the-sun model and reducing costs.

After the right choosing of the best appropriate business support model we have to consider which the key components for successfully providing global customer support services. There are five technical components, with their underlying process and political changes, that are necessary:

1. A centralized client management system that stores client information, account data, purchase information, entitlements and warranties, and customers' needs and desires. This system must have the ability to store and use the data in multiple languages, and functions the same across all locations.
2. A centralized knowledge base, available in several Languages (manage the knowledge across different languages).
3. A service-level agreement (SLA) that covers the need for 24 hours a day, every day or critical support, determines the timeliness of the responses, and determines the coverage to be provided
4. A deep understanding of the needs and desires of the client base, across the many languages to be supported (language must be supported differently).
5. An understanding and support of the many languages and cultural aspects of each region to be supported.

Lastly it could very suggested to answer to this question: "What challenges arise from a global perspective?" There are two issues that present the largest challenge, depending on your implementation and client base: language support and centralized systems and processes.

- Language means you have to identify what languages are spoken among your customer base, which ones it is imperative to support, and which ones have both critical mass (sufficient number of clients to justify implementation) and critical or strategic needs to be supported.
- Centralizing systems and processes means that customers, regardless of where they are located, should expect and receive the same service and a seamless customer experience.

4. Future Scenario

4.1. Why did 70% of the projects fail?

"This question is the typical $ 1.000.000 question", this was the first answer I received both in the Italian and in the Dutch market. But let see one thing at time.

In a lot of big companies several CRM projects started at the same time and of course not all of them could arrive at the end and could be really applied to the business. Some companies, in particular in the northern countries follow this way because it's hard to find from the beginning the best solution from the best supplier for all the different processes and departments.

So, from a statistical point of view if a company started with 10 projects and only 1 at the end survives an organization like Gartner could say that 90% of the CRM projects failed.

But it's not true because from the beginning a lot of companies planned to start with several applications for arriving at the end with a working project running into the system in a complete integrated way. So for sure we cannot say that the first CRM wave was a success, not at all, but maybe it's too high that percentage of failure (70%).

Looking deeper in the 2 analysed market the first thing we discovered talking about the failure of CRM was that the majority of the companies thinks that the real problem of CRM is in its integration with the whole business system. The goals of a CRM project are brilliant in theory but in practise it's well working almost only in the marketing department and then it's very hard to align the marketing purposes with all the different activities connected with clients, in particular in a

more decentred level (call center, sales management and so on). So for a lot of top managers CRM is a great support for campaign management or for consumer behaviour analysis but it's much less useful in the daily working of sales persons.

A second very important element to consider before starting to talk about the lack of strategy and the expensive and useless technology it's the almost completely absence of clear and well working performance indicators in the CRM results analysis. This is a very big problem in particular for the Italian market where a CRM suite is considered successful only if the ROI is more than 10% and if there is a clear boost of the revenue. In the Dutch market, for example, some big companies as PWC or Robeco use a lot of KPI (Key Performance Indicators) to determine if a CRM project is going to follow the expectations of the company. But also in the Netherlands the majority of the companies doesn't use any well developed KPI. So, sometimes, it could happen that for a company the CRM project was not a success just because the managers are not able to demonstrate that some good results are coming from this approach. By the way these are not excuses for the bad result of the first wave of CRM but only an attempt to look at the situation from another point of view.

Normally looking at the Gartner Research you can see that the criteria to define a CRM project as a success is not the technology but all what's around the application of the technology.
Maybe if it was based only on the technology acquisition from the companies it would have been a great success.
This result was confirmed by the interviewed consultants too, in fact, in their CRM plateaus planning the first 7 out of 10 reasons on the failure of CRM are not in the technology, even if they have seen some very large projects that failed just on the technology side.
As technology we consider not only the interface between the database and the employees' applications but also the IT part that's necessary to integrate the database with the Front Office and the Back Office and in this domain they have seen a lot of large projects that didn't fit well in the IT architecture that was not able to align in the correct way the different purposes of the different actors in the system. Except for these few aspects all the interviewed managers and consultants both in Italy and In the Netherlands are agree with Gartner: the failure of CRM is 90% up to the lacks in the changing management.

We can assume that CRM failed in a so big number of projects because companies start to apply the suite without working on the processes before. If you don't prepare the company to the arrive of CRM this suite will never feel comfortable inside your company and your company will never be able to create the key factor for a real successful CRM: the CRM wheel where you give to the system your data and it will help the intelligence of your departments to better perform the service for your customers. So the real defeat of CRM is not in the 70% of failures but in the fact that, also now, when someone is talking about CRM is very hard to hear words like Knowledge Management or Change Management or at least Customer Oriented and the majority of the companies are always talking about technologies and implementation.

Another big reason that helped to rise the percentage of CRM failures is hidden in the hype-stories of the CRM vendors. If you go to conferences or a CRM meeting you will hear the majority of the vendors saying: we have a complete CRM solution at the best price; then if you go to take a lot deeper on their application you will see they offer only a Call Center and mailing software management and maybe a simple solution for the Automation Sales Management. So, if it's true that 70% of CRM applications failed it's more precise to say that, inside this 70% almost 45% of the companies never considered CRM as a real project.

When some years ago CRM was defined as a great success in the US market people were talking about the number of project sold. But it doesn't mean it was a success. Today here in Europe when we are talking about the big failure of CRM we look at the number of project that failed but how many of them have really been developed in a right and complete way?

Talking about CRM means talking about knowing your customers not about the last release of a software application.

4.2. CRM in the future

CRM is here to stay! And in 10 years companies will think: "how did they do business without CRM 10 years ago?" or better "how was it possible to manage customers' relationships without CRM?". In the Dutch market almost everybody is pretty sure about this.
But even if it will survive we will have a different CRM: much more strategically customised for the personal needs of companies and much less standardise in the technology solutions. Also in the Italian market, where the northern European countries market could represent a future scenario, at least in a short term, companies don't believe in the future of a high level standardised CRM suites.
Companies have understood that the big CRM applications that now you can find on the market are too far from the real level of the daily work of the workers, first of all because the level of technology is to too high and quite often at a work floor level it will be hardly accepted, and secondly people cannot really work with them because the suite is not completely integrated into the system.
So looking at these implications it's hard to believe that a CRM where big suppliers try to push a big suite to the companies and they have to change completely the organizations it will be not the future for this "new" customers business philosophy. The new scenario will be based on a deeper analysis by the companies about which kind of organizations they want to be and to become and then these companies will start to analyse the market to find a supplier that will offer an appropriate strategy for a second time CRM acquisition. This market analysis will be based more on the strategic part than on the operative one so the role of the IT department in this kind of acquisitions will become less and less important.

This new and more customised approach can create a problem of data integration, of course, but there are many specialists on data management and data integration and when you have one customer database solid and reliable, with an high quality data inside and well connected with all the different 5 channels every integrations with different customised systems will be easier.
This kind of future CRM idea will implicate, more than buying everything from a big vendor, a total best of breed point of view. This approach to find the right suppliers will remain on the market till when the big CRM companies will understand that, selling an expensive gadget that, in theory, looks very nice but it's too far from the practical situation in a company's work, it is not exactly a solution for what companies need in a particular time.

So in the future it will be definitely a more conceptualised CRM. Maybe it will be renamed from some suppliers but what has to be remembered from the first big hype it's that you cannot hope to buy a CRM suite and to find inside a CRM philosophy. So the first supplier of company it's the company itself: look at your processes, create a strategic plateau planning where you clear define where you want to be in 5 years and then start to look at the market solutions.
Supplier can give you both technological and strategic support but the answers to the basic questions about the relationship with your customers have to be found inside the management of the company. When the top management has acquired the concept of CRM in its head a company can apply all the different solutions and the projects will be successful.

4.3. Psychology and CRM: a possible framework

Some companies have understood that customers look at the product (and of course at the service) in an emotional way, in a sensation way. In particular, some of them have realised that it's

not the number or the kind of products they are selling the real competitive advantage in the market. It's in the customer perception the real key factor for a successful business.
5 years ago, for example, the bank Robeco decided to put a CRM application also in the product creation department; they decide to sell some types of product because customers showed they wanted to have this opportunity product in their portfolio. They started to spent a lot of money in the internal marketing trying to offer not a product to the customer but a feeling or in other words a special service with included a product.
To make this they started to work a lot in the communication with their customers. To do that they looked at their internal database trying to find some "hidden" key variables that could suggest them how to segment their customer to create homogeneous groups as targets. But inside their database they didn't find any "human being" variables to create the segmentation of the market they wanted.
The number of products bought or the money invested in their bank accounts (and other variables like those) were not the information that they wanted.
They didn't want to know the age of their customers but information about the generation they belong, they didn't want the number of calls to the Customer Service they made in the last 3 month but which kind of information they asked for, if they problem they were talking about were big or small.
These kind of variables were not included in their database and there were no way to have these information from the existing database. So they thought to ask for the help of some philosophers and psychologists. They decided to use this "human analysis" approach because they made a simple assumption: even if we have new marketing tools and technologies and staff the human beings is still the same: the way people like to go shopping Saturday afternoon didn't change in the last decades or the fact that most of the rich people like to buy cheap things instead of expensive presents is still working so if you try to know as much as possible about human beings for sure you will know much more about your customers too.
The psychologists and philosophers team suggest to the top management of the bank that maybe the best solution for their requests was the application of Carl Jung approach.

The psychological theories of Carl Jung looks at the differences in personal style and he divides people in 4 different areas:

- Interaction with others (extrovert versus introvert)
- Understanding the world (sensing versus intuition)
- Making decisions (thinking versus feeling)
- Time allocation (perceiving versus judging)

To apply this theory in their database they used the Myers-Briggs Type Indicator (MBTI) or in other words a personality test based on Jung theory. With MBTI is possible to translate the theory into a simple questionnaire. This questionnaire was applied to the database and to a sample of customers and from this the "human beings" team started to work on the segmentation process.
This process was first based on the 16 groups that Jung defines to divide the entire population and then on the bank database. They were looking for variables in the database that could gave, as a result, the same groups that they could have from the theory.
Instead of putting the focus of the company on where a customer live or how many bank account he has in our bank they defined the psychological profile of the people to whom they were selling their product. "Even if I don't know you but I know your customer profile I could say a lot of things about you" this was the way how the managers of Robeco explained their psychological CRM approach. They gave a personality to their groups and not only a business description.
So they started to look deeper and deeper in their databases and for questions as "how much involved people are in our products?" they wondered another question: "with which variables can I define the involvement of our customer?" and the answer, just to have an example was: "the

number of call and re-call he made about a certain problem or the number of emails he answered back or more how many new launched products he bought in the last year" and so on.
In this way they started to create new derived variables from the original relational database and then they made a simple statistic correlation among the new variables and the already existed ones.
They result was surprising, correlation among 0.2 and 0.9 with an average value of 0.6.
They create a new "psychological database" where they put the objective data and the subjective sources. This new human beings database was the base for the new one-to-groups communication and the results were, and still are, brilliant.
The great change in the new point of view was that they didn't communicate anymore with customers who had a lot of bonds and customers who didn't have bond at all, they started to talk with "extrovert or introvert" customers or with "thinking or feeling" clients.
So the brochures were not anymore for people who invest a lot of money and people who don't invest at all but for sensitive persons or for intuitive one, just to have an example.
The mailing management started to have retention rated never seen before: 20%, 30% and sometimes 40%. In this way the bank was able to make 50% of its customers very profitable after just the first 2 years.
"This is the way we do CRM" they answered to my questions.
They used the intelligence approach in a double sense: they gave to the database intelligent variable (or human being information) and then they applied human intelligence to segment the market and to create a new "intelligent database".

They think the right approach to the CRM is "learn to forget": learn as much as possible about your customers, about procedures, about CRM solutions and the forget all of this and think your customers are humans exactly like all of us. And "the human beings don't change their habits all the time that a new relational software arrives in the market".
In the following lines it's possible to see a quick draft of the MBTI approach.
We have 2 poles for each 4 dimensions for a total of 16 basic personality types:

Interaction with others: - extrovert (E)
- introvert (I)
Understanding the world: - sensing (S)
- intuition (N)
Making decisions: - thinking (T)
- feeling (F)
Time allocation: - perceiving (P)
- judging (J)

	TP	**TJ**	**FP**	**FJ**
ES	ESTP	ESTJ	ESFP	ESFJ
EN	ENTP	ENTJ	ENFP	ENFJ
IS	ISTP	ISTJ	ISFP	ISFJ
IN	INTP	INTJ	INFP	INFJ

Tab. 3: Measuring the MBTI and Coming Up Short - Pittenger, David J, (1993)

So, in total, we can have 16 different personal types and for each one the MBTI theory defines a different personality as for example:
the **NF** (Intuition/Feeling) persons prefer ambiguity, creating, feeling, problems/opportunities;
the **NT** (intuition/thinking) persons prefer defining problems/opportunities, identifying basic objective and policies and establishing criteria for success;
the **ST** (sensing/thinking) persons prefer defining solutions and planning their implementation;
the **SF** (sensing/feeling) persons prefer to be practical but work on the basis of what they feel to be the right way to go;
and so on.
In the lines below we have considered only 2 out of the 4 possible dimensions, considering all of them the personality type will become more and more detailed.

As it's possible to see, the description of the personalities has nothing about the correlation between the customer and the company, it's only about human beings.
Then, it's up to the "intelligence department" in the company trying to find inside the database which are the variables more correlated with the MBTI results.

Customers are first of all persons and then clients of a company, not so many companies haven't yet understood this concept.

5. Conclusions

The Customer oriented organization is on the rise. Technological and economical development force companies in competitive markets, to change their strategic focus. No longer are optimising internal processes and extending market share, the cornerstones of strategy. Instead, the central question is how a company should operate to create the highest possible added value for customers (new and already existing). Information and communication technology increasingly makes it possible to answer this question. To collect and analyse customer data, and to reuse this information promptly whenever employees are in contact with customers has become easier and cheaper. This is the core of CRM: making use of customer information to increase service levels, customer profitability and eventually customer loyalty.

Analytical CRM systems achieve a single, unified view of the customer and facilitate a seamless exchange between customers and corporations. However, a single view of customers requires tightly integrated applications both within the realm of CRM applications and back-end technologies, such as knowledge management. Organizational knowledge creates value in use. A key challenge in the application of knowledge is transferring it from where it was created or captured to where it is needed and should be used. We tried to address the issue in this research by developing a simple and overall framework to integrate the traditional CRM functionalities with the management and application of knowledge in the context of marketing decisions.

Our approach to integrating knowledge management techniques into Customer Relationship Management activities provides several advantages. Individuals, various business units, and the organization as a whole can all benefit from the proposed integrated KM-based CRM environment. At the individual level, customer service representatives can browse the knowledge repositories, perform plain-text searches for specific customer information, customer profile and history, and rating. This real time access to relevant information enables the representatives to better serve customers. Different business units can benefit from such a system by being able to gain access to customer and sales information that are gathered through various touch points, as well as the standard policies and procedures that are otherwise not easily accessible.

At the organizational level, this KM-based system could be utilized in providing a common infrastructure for carrying out customer relationship management activities and institutionalizing a comprehensive set of CRM policies. Current technologies such as intelligent agents and XML technologies were selected and used for implementation because:
(1) to reduce the cognitive burden on the user in problem solving and decision making activities, and (2) these technologies facilitate the easy integration of knowledge management activities and CRM activities.

For example, intelligent agents can be tasked to monitor certain types of transactions or search and retrieve specific customer related information in real time. XML technology permits easy codification and dissemination of knowledge elements to interested parties through push or pull technologies. In addition, it improves the interoperability of knowledge elements between different applications. Traditionally, KM tools use proprietary knowledge structures and internal

representations that prohibit the exchange of knowledge between various applications. In contrast, using both the XML representation and the Intelligent agents it's possible to alleviate this problem to a great extent. Storing customer information in an XML database also facilitates various stakeholders to view information at different levels of aggregation through specific transformations. For example, customer service representatives can query the XML database for individual customer histories and profiles, whereas, marketing people can view customer information based on certain 'value propositions'.

Approaching the new KM-based CRM domain written above we found a different developing main step comparing the North of Europe (Dutch market) with the South (Italian market). In the first one more than 70% of the CRM application failed (Gartner, 2003) while in Italy the CRM integration approach to boost the whole business is definitely considered a "hot topic".

Up to consider this European descriptive market situation for the CRM development our future research will be to try to find which are the reasons behind this different business situation.
Could it be a cultural/social different approach or is it only a south business delay in the using and developing of the Information Technologies applied to the marketing processes?
As seen above the application of a CRM (or KM-based CRM) suite in the whole business process needs a radical change on the firms' management approach looking at the "new" concept of customer and of market. The reasons of a so large percentage of failures could be situated on a wrong top management organization approach before and after the "go-live" day.
So instead of a simple cultural different approach for the CRM-application domain, the real main difference between the 2 markets (Netherlands and Italy) and between the 2 sides of Europe (North and South) could be a different approach in the using of the customer information's trying to transform them in sharing customer knowledge.

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