The Use of Information Technology to Support Relationship Management – Strategic, Organizational, and Technological Issues.

C.B. Kappert – University of Groningen and Avéro, Groningen, The Netherlands
R. Bloemink – Bloemink Management Consultancy, Lunteren, The Netherlands
C. Hoekstra – Avéro and International Management Studies Groningen, Groningen, The Netherlands

Abstract.

Exchange relationships between an organization and its customers change due to technological and societal developments. This paper explores the relationships between strategic, organizational and technological issues in order to design and implement effective relationship management systems. A six step method is presented to link these issues in a framework.

Introduction: The growing importance of relationships in marketing.

The rapid advancements in information and communication technology have influenced society in general, and exchange relationships between suppliers and their customers in particular (Blattberg, 1994). These changes have been extensively reported elsewhere (eg. Davidow, 1992, Davis, 1998, Tapscott, 1996, Lazer, 1990, Peppers, 1993), but recurring themes include among others the increased digitization of offerings, mass-customization, multi-media interactivity, dialogue, partnerships, networks and a new definition of organizations. These developments have led to increased volatility, globalization and realtime characteristics of exchange relationships. Notions of time and place have changed. Today, traditional marketing roles are difficult to distinguish as activities to generate value are redistributed over the participants in the exchange relationship (Wikström, 1994). Although the developments in various markets differ due to reasons of incompatible customer, product and distribution characteristics, some general observations can be made.

The technological innovations have changed product characteristics in fundamental ways, and those changes occur at an increasing pace (Stalk, 1990, Fine, 1998). Competitive advantage tied to proprietary production or product technology is made less important or sustainable as new innovations continue to surface, making contemporary designs instantly obsolete (Zangwill, 1993). Sometimes, the material qualities of the product are even too complex for a customer to understand. The product characteristics often have to be related to the circumstances in which the product is used, introducing system risks, such as the connection to peripheral devices. The customer determines his choice by more immaterial aspects, such as a strong brand name, broad acceptance (market standards) or trustworthiness of the supplier to help him out (Marder, 1997). The material product characteristics only provide an entry in the evoked set of the customer, but is not a vehicle for choice anymore in various markets. Informational aspects of products become of paramount importance (Glazer, 1991).

***in* McLoughlin, Damien. and C. Horan (eds.), *Proceedings of The 15th Annual IMP Conference*, University College, Dublin 1999**

Related to the reduced importance of material product characteristics is the fact that most of the more basic needs in terms of the Maslow hierarchy, such as the need for food and shelter, are met in developed countries (Davidoff, 1987). New needs arise in terms of selfactualization and those needs are mostly met by services or other 'virtual' products (as seen in the growth of service related industries, like the travel and entertainment industries, but also financial industies). Such products and services put a premium on customization of the product or service and the (active) involvement of the customer. Increasingly, the nonmaterial product aspects are digitized, essentially reducing the cost of customized production and distribution to zero. Digital products can easily be reproduced or copied, and sometimes become more intelligent with use or more adapted to its user. These developments put a premium on customer and product knowledge, that is the management of intellectual capital (Henning, 1998, Stewart, 1997). Both the supplier and the customer bring knowledge to the exchange relationship, and this sharing of knowledge creates value (Wikström, 1994).

The growing competitive pressure and changing market conditions have made organizations aware of the importance of establishing strong relationships with customers (Furlong, 1993, Cross, 1995). The creation of shared understanding by managing perceptions through the interactive exchange of information is rising in importance in the relationships between an organization and its customers (Levitt, 1983, Boulding, 1993).

In these situations, the information given by the customer to the supplier (and the other way around) can become a strong competitive advantage if adequately managed. For the customer, the suppliers knowledge can lead to enhanced value, increased convenience and reduced costs. The suppliers understanding of his specific, dynamically evolving needs reduces the transaction costs for the customer by eliminating search costs and costs related to the expressing of his needs to potential suppliers. Every contact and transactional event becomes a learning oppurtunity in which knowledge is exchanged to facilitate and reduce costs of future encounters (Peppers, 1999). If established, such individualized relationship constitutes a switching barrier for the customer. The customer would have to go through the same knowledge exchange with competitors of the current supplier, which can take considerable effort.

From the suppliers viewpoint, customer knowledge over a broad base of customer becomes an valuable tool for product development and relationship management. Lessons learned in relationships with specific customers can be applied to relationships with other, similar customers. The data gathered by interacting with the customer base can give valuable information to idea generation phase of product development and the effective use of marketing instruments.

On top of that, cost considerations have illuminated the fact that in order to profit from a customer, the supplier has to seek repeat business from that customer (Reichheld, 1996). The costs of turning a prospect into a customer are often not offset by the margin of the first transaction. The costs of acquiring a customer are much higher than the costs of keeping him (Stone, 1995). In order to make a profit, the organization evaluates the customer Life Time Value (LTV), which is established as the total (discounted) value of future transactions, in which revenues and costs have been taken into consideration. In order to reach a positive

LTV, the organization has to conduct various transactions throughout time or enable crosselling at the individual customer level. This means the establishment of a profitable relationship with the individual customer.

Although the general observations lead to the conclusion that relationships are becoming more important, it is important to notice that the customer increasingly takes the iniative to start a relationship. New media like the Internet bring new rules with them, such as not solliciting the customer without his prior consent. Concerns regarding privacy and security in an age where everything leaves a digital trail, and where it becomes much more easy to profile a customer with respect to his behaviour, have aggrevated this fact (Kosiur, 1997). Increasingly, the customer prefers to remain anonymous untill the moment of transaction when authentication is required. Although the importance of building relationships remains undisputed, customers will only relate to suppliers who have been worthy of their trust (Schwartz, 1997). On the Internet, community brokers act on behalf of their participants and mediate between suppliers who want to offer their services and products to community members and the members themselves (Hagel III, 1997).

The use of information technology to support relationship management.

Given the importance of relationship management, the complexity of the customer base, along with the complexity of managing relationships with different sorts of customers at the individual level the demand for information technology support tools for relationship management has increased. For most companies, the nonhomogeneous segments of customers and prospects, the proliferation of the product and service assortiment, along with the whole range of marketing instruments and distribution media, have made it nearly impossible to manage individual exchange relationships without some sort of technological support.

The impact of information technology in relationship management can be seen from two perspectives. In the operational perspective, information technology has a major influence on marketing and sales processes by changing communication patterns, production processes, and transaction processes (through increased modularization and customization). It is here that the use of information technology has led to greater complexity by making a lot of product varieties and distibution mechanisms possible. Examples of this perspective are Automated Teller Machines (ATM's), Call Center and Voice Response Facilities, E-Mail, Fax, EDI, Intelligent Agents, Point-of-Sale applications, Virtual Reality demonstrations (for examples, see Ing, 1994, Schmitz, 1994).

An important characteristic of these systems is that the interaction and transaction between supplier and customer is automated to a certain extent. Often these technologies make 24-hour availability in the vincinity of the customer possible. With this type of technology, the relationship is triggered by the customer and the focus is on the transaction, not on the specific customer conducting the transaction. Specifically low involvement exchange relationships have been influenced, and the technology has made it possible to reduce transaction cost (including search costs). Historical customer behaviour is easily stored in a digital format, providing a store of knowledge for customization and business development.

Besides their impact on operational marketing and sales processes, information technology is also increasingly important in the management of customer relationships. By this perspective we mean the use of database, reporting and analysis techniques to represent or model the reality of the exchange relationship in order to manage activities at (possibly) the individual customer level (Davies, 1992, Shaw, 1988). The focus with this type of application is on the management of customers, not on the management of transactions as with the first type of technology. In most cases, the extensive use of technological tools in the operational exchange relationships creates a wealth of factual data to base such management tools upon. That is, by gathering the data from operational systems, management can create information which supports them in the structuring of day-to-day activities and the definition of long term strategy (Deighton, 1994). The targeting of right customers with the right offers at the right time (sometimes coined event-driven marketing) can greatly be enhanced, but also the management of customer complaints or information requests can be effectively supported. Front office employees, or anybody in contact with customers, can be empowered through the use of an information system which provides a complete customer file at the moment of truth, when facing the customer. In the general, the workflow of customer related activities can be managerially and operationally supported. These systems bring customer intelligence to the point of contact with the customer. Knowledge can be exchanged between employees and the system functions as a knowledge repository, even when the employees have left the company.

We limit the discussion to information technology which supports the active management of customer relationships, that is we take the second perspective. Such tools, often coined ´marketing & sales support systems´, 'database marketing systems', ´sales/marketing information systems´ (we prefer to use the description ´relationship management system´ – RMS) have found wide acceptance by organizations operating in the business-to-business markets and the business-to-consumer markets. By integrating customer characteristics with a history of contacts and transactions, it enables organizations to gain insight in customer needs and effectively adressing those needs throughout time, thereby increasing the customer LTV. Supporting various operational marketing and sales activities in an integrated fashion, these systems have reached a high level of technological sophistication.

The lack of operational success of relationship management systems.

Despite the technological sophistication of RMS, the adoption by organizations has been relatively slow, and implementations were not always a succes. There seems to be more technology available than organizations can implement and use productively (Wallis, 1992). There is not much research into the succes of relationship management systems, with a few notable exceptions (Higby, 1991, Wierenga, 1992). In general the succes has been hard to measure. Often, the succes criteria are not specified upfront or outlined in abstract, qualitative terms, such as 'to improve customer relationships'. This makes an adequate evaluation of the benefits of the RMS after implementation difficult. It can be noted that the application area of RMS, marketing and sales processes, is one of the last functional areas of the organization to be automated. This can be attributed to several reasons.

In general, marketing is not considered to be easily modelled, like for example finance. There are no clear cut rules how marketing and sales processes are to be performed. Despite a

substantial body of academic research, the specific circumstances of the organizational context combined with the highly intuitive and creative characteristics of marketing personnel are a bottleneck to acceptance of procedural information technology. Marketeers rely often on their mental models and rules of thumb, although they are prone to errors (Lilien, 1998). The meeting of High Tech and High Touch is not always a happy gathering. RMS are often considered not flexible enough to adopt to the rapidly changing circumstances in the marketing field.

Most of the important parameters in marketing decision making are not easy to measure, making data gathering an intensive task, if not altogether impossible. The distributed nature of sources of meaningful marketing data have also not contributed to a fast introduction of RMS. Important data are often stored in other functional legacy systems, which are not designed to provide flexible input to RMS. The separate administration of those data in RMS is not an issue, as data redundancy brings its own problems. As the number of ways a customer can interact with the company increases, it become specifically hard to integrate all the data over the various media into one customer file in realtime.

Another reason that the implementation of RMS is not always succesful has to do with internal managerial issues. Although the RMS is intended to make the efforts and results of individual organization members transparant to serve the customer better, it also can be used as an internal monitoring device by management. If management uses the RMS as a system to monitor its own employees (eg. salesforce performance), the system is almost sure to fail. Employees are smart enough to input whatever their bosses want to see, which may not be in concordance with reality. Or they just stop using the system, which may have severe consequences for the quality of the data in the system. Only by strict rules, management can force the employees to use the system, but in general it is more healthy to focus on the external issue of better serving the customer. Management should adopt in this perspective a coaching role. This shows the strong interdepence between technological and organizational issues.

In this paper, we argue that despite the availability of state-of-the art information technology for supporting relationship management, the implementation and use of such technology in practical business situations remains a difficult problem. Often investments in relationship management systems are questioned, and the initial enthusiasm evaporates in situations where the system is considered as an administrative burden with no added value. The central theme we want to explore here is that in order to define and implement meaningful relationships from which both the supplier and the customer profit in the long term, such technology has to be integrated with a long term customer strategy and a suitable organizational structure (including the organizational culture regarding customer relationships).

The use of technology in general has major implications for business processes (Davenport, 1993). The robust implementation of information systems in organizational settings not adapted to the purpose those systems are supposed to fulfill will have negative results. This phenomenon may even be stronger in marketing settings, where experience with technology is scarce and people are often unfamiliar with systematic procedures such systems require.

If one of the three elements of technology, strategy, and organizational structure is not aligned with the other two, unsatisfactorily results of relationship management systems will continue to exist, opening up opportunities to competitors who have integrated these issues in a better way. This paper explores the three elements individually and identifies the necessary relationships between the elements by means of a six step method. By such an description we reach an integrated picture for a succesful implementation of relationship management support system from which both practitioners and researchers can profit.

Some definitions of customer strategy, organizational structure and technology.

A *customer strategy* is considered as a dynamic description of the way in which the organization by means of certain competences aims to fulfill defined customer needs through time. Such strategy may be explicit, as written down in marketing or strategic plans or communicated by management. Even without such formal statement, the customer activities the supplier performs, show the customer strategic intent. This 'way of doing things' may be rather implicit, and is sometimes in conflict with explicit strategy. The alignment of explicit and implicit customer strategy is important, as both employees and customers get confused when these two differ.

Elements of a customer strategy are a characterization of the customer/prospect base (often by means of a segmentation), a definition of the various offerings (product management) and the link between customer needs and offerings by means of a relationship strategy. The relationship strategy outlines the activities that are performed in relation to the customer.

On an abstract level, the customer strategy describes the way the organization manages perceived and expected value of selected customers in a competitive context. By balancing perceived and expected value, the satisfaction rate of customers remains high, thereby leading to enduring relationships and a high LTV of the customer base (Zeithaml, 1988, Zeithaml, 1996, Boulding, 1993).

A few additional remarks can be made on customer strategy:

- the organization can´t be all things to all people at all time: based on a (strong) selection of customers, a sharp definition of the needs of those selected customers, a distinguishing set of offerings is developed, integrating core and augmented service, product and relationship attributes.
- as customer needs tend to evolve, the offerings and relationship strategy have to be continuously adjusted to changing competitive circumstances.
- not all customers are created equal: based upon identifiable customer profiles, the competences of the organization as reflected in product offerings and relationship management capabilities are tuned to maximize customer LTV.

The *organizational structure* delineates the way in which the activities are structured and responsibilities have been laid down in order to implement a customer strategy. Such a structure has also both formal and informal/cultural aspects. In a formal sense, the organigram shows the organizational structure. This organigram reflects the positions, tasks and

responsibilities of those who are instrumental to reaching customer goals. In an informal sense, the organizational structure reflects ´the way things are organized around here´. The responsibility structure should be perfectly clear. As customers in general are getting more demanding, and the relationships with suppliers grow more complex and time dependent, no organization can afford to loose time and track of customer related activities. Customers get easily annoyed when they don't know to which person to turn to or when his question has been lost. Most companies are not organized to be customer driven and cross-functional cooperation in order to solve customer problems is not easily established (Whiteley, 1991).

Besides the operational division of activities, the organizational structure is a reflection of the attitude and (cultural) values of the employees towards the customer. Employees have to be motivated through a shared vision and should feel ownership when customer problems arise. It takes time to change the orientation from a focus on the product or functional interest towards a customer oriented attitude.

The *technology* component is embedded in the RMS itself. By the RMS we mean the specific part of the business information architecture which is directed to supporting customer contact management and relationship management. The RMS is often related to other information systems, specifically financial/admininstrative systems and logistics/distributional systems.

The technical implementational details and sophistication of the RMS vary widely between organizations. The sophistication ranges from simple customer lists to advanced datamining tools which integrate various internal and external databases and intelligently model data contained in databases to provide decision support. We have found it useful to classify these parts of RMS into three categories (see also figure 1):

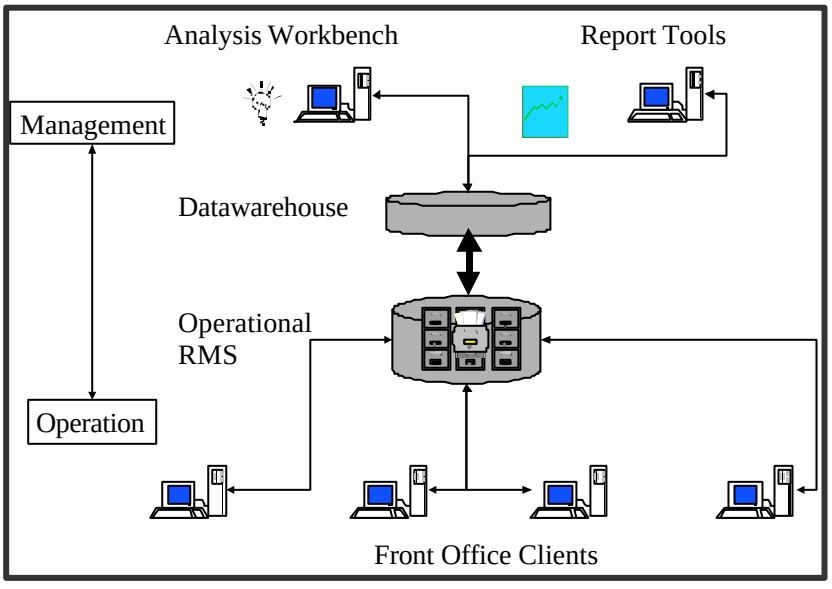

Figure 1. Components of an Relationship Management System (RMS).

1. *Operational Contact and Relationship Management System*: this system is used by front office employees to support their day-to-day activities. This system contains some profiling information of customers (eg. their adress and their status), along with contact

history (inbound and outbound telephone calls, mailings, visits of salespersons, complaints) and some transaction history if available. Sophisticated systems use customer planning tools to induce activities based upon the customers history and profile, sometimes even automatically. The system is used as a repository of customer information and new contacts or other customer data are administrated in this system. In this way, the employee who deals with the customer is empowered to service the customer individually. The informed employee can manage customer satisfaction in this way en thereby opening the frontdoor to an enduring customer relationship.

2. *Datawarehouse and Report System*: this part provides a structural mechanism to integrate and aggregate customer, sales, marketing, financial and logistic data into an useful format. Compression reduces the abundance of data to its salient features. Such information, often generated from various sources, helps management to plan and monitor activities, provides decision support and can be used for simulation purposes. The characteristic property of this part of the RMS is that no new data are administrated in this system: it merely rearranges data from other systems (such as the operational relationship management system or operational transaction systems) to suit the purpose for which the analysis is performed. Most of the analysis done in this part of the RMS is rulebased and can be performed by query tools, possibly multidimensional query tools. Most of the time this system is used by business analysts, market researchers or market management.

3. *Analysis Workbench*: this part contains general purpose statistical tools to model the data contained in either the datawarehouse or the operational system. These tools, which by itsself do not contain or generate data, are used to induce causal relationships from the various data items. Tools include various statistical techniques (clustering, multidimensional scaling, regression) or artificial intelligence tools, such as neural networks, genetic algorithms, expert systems and fuzzy logic. Users of these tools, which can require considerable technical expertise, are most often market researchers and business analysts.

Not all organizations use all three parts of the RMS. It depends on the state of sophistication of marketing strategy, the developmental stage of the organization, and the specific characteristics of the market or industry. Most of the time, organizations progress in the use of these parts from 1 to 3 (see also Huizingh, 1992). By installing an operational relation management system, there is often an explosion in data volume, making tools like datawarehouses and analysis workbench technology necessary.

The three parts are interrelated. There is often a bidirectional link between the operational relationship management system and the datawarehouse. Aggregated data flow from the operational system into the datawarehouse for further analysis. Certain processed data in the datawarehouse may be used in the operational system in order to provide information to front office employees, for example customer status data, which may be based on complex calculations. Often virtual snapshots of the information contained in the datawarehouse are available to users of the operational system. The datawarehouse provides most of the time the data needed for the analysis workbench.

The RMS in total represents or models the customer strategy and organizational structure. In order to support customer management activities, the RMS should reflect those activities as closely as possible.

An important aspect in RMS is the description of its database, along with the quality of the data contained within the system. The database with its contents represents the interaction and transaction processes with the customer, along with the defining characteristics of the customer, such as his/her needs, wishes and attitude towards the organization. The content of the database is to a great extent influenced by the customer strategy the organization is following.

The Integration of Technology, Organizational and Strategic issues – A Process Model.

A RMS is just a generic black box. Most RMS are off the shelf packages with general characteristics, which can be tuned to specific details of the marketing and sales processes of the organization. By integrating the system within the organizational structure and the prevailing customer strategy, the black box can be tuned to the specifics of the organization, thereby enabling employees to use its information and functionality to enhance customer interactions and transactions for relationship management.

In order to reach such integration of the tool with the strategic and organization issues, we have developed a process model. This process model is based on two paradigms that have recently attracked attention of researchers and practioners alike. The Business Process Redesign paradigm has focused the attention on organizational process structures in relation to customer need satisfaction, and the important role of information technology in shaping organizational design (Davenport, 1993, Hammer, 1995). Although the BPR paradigm has been questioned by some, certain elements of its description of organizations are fruitful in studying the relationships between technology, organizational and strategic issues.

The second paradigm which has stimulated our thinking about the process model is the use of object-oriented methods in the design and programming of information technology (Boman, 1997, Jacobson, 1994, Graham, 1994). The focus within the object orientation on reusability and extensibility of (software) components or objects, which hide the specifics of their internal operation by encapsulation (a description of the methods and allowable messages of an object) has great advantages when describing workflows and supporting technology in the management of customer relationships.

By using the process model when designing and implementing the RMS in the organization setting, an adequate fit or at least some understanding can be gained in the intricate relationship between technical, organizational and strategic issues. Up till now we have identified six steps in modelling the RMS context. The process model should be continuously evaluated, as changing customer needs, technological possibilities and organizational adaptions may give rise to reconfiguration of the total RMS.

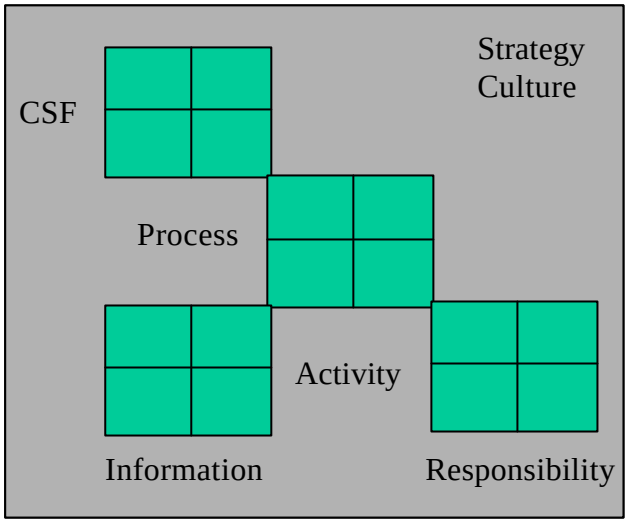

Figure 2. Linking various issues in the implementation of RMS: an overview.

The process model consist of six steps, in which various elements of the triad technology, strategy and organization are aligned through the use of four two-dimensional matrices (see figure 2). By using the process model, organizations can identify the issues related to the succesful implementation of RMS.

Step 1. Description of key succes factors, as defined by the customer [Key Succes Factor List]

In this step the important aspects of the offering and supplier performance as seen by the customer are defined. The offering encompasses the total customer value and thus includes product value and relationship value. The description of key success factors is done in terms of customer results. Such definition should be done by front office employees, or other persons who are knowledgeable about customer needs. Specific attention should be paid to the fact that employees sometimes tend to stick to objective and material product features. Complaints of customers are in their eyes often related to poor product quality, although these issues may be more determined by relationship aspects. A survey of customer complaints, or an analysis of historical marketing data (eg. research into the loyalty of customers) can provide insight into factors determining customer satisfaction and life time value (Naumann, 1995).

Even better is it to bring in the customer himself, although there may be problems in establishing what customers really want: market research has difficulties in surfacing real customer needs and motivations. Only continuous measurement and monitoring of stated customer behaviour in relation to real behaviour can identify important customer criteria.

Common attributes include such elements as quality, deliverance upon promises, response time, service grades/friendliness, flexibility. Each attribute functions as a yardstick to evaluate the performance of the organization and should be measurable and normative. Such a key succes factor description is a constraint to process design: the activities, responsibilities and technological support should be configured in such way that the key succes factors are constantly met. Adequate monitoring should be performed: if a customer places great

emphasis on response time, the difference between the time of activation of a question and the time of receiving the resulting answer should be measured. This means that both the question and the answer have to be registred in the RMS in order to determine throughput time.

The customer key succes factors can be matched with specified customer strategies. Often this means that the high level marketing plans have to be detailed to a meaningful segmentation of the customer base, along with an instrumental marketing strategy to serve those identified segments. At the individual customer level, these issues can be adressed in an account plan, which specifies the activities and results both customer perform and expect during a certain period based on a detailed customer profile. With a substantial amount of customers this process can be automated, resulting in contact plans for each customer.

Step 2. Identification of customer processes [Key Succes Factor/Process Matrix]

Each organization performs certain identifiable processes in the face of the customer in order to fulfill his needs. Examples include information request handling, transaction processing, claims/service management, complaint handling, and product development. A process is a structure of related activities that produces distinctive value for the customer. Each process starts with a contact with the customer, either initiated by the customer or the organization. We call such a contact an event, which is important because the expectation of the customer at this moment can be managed. The final stage of a customer process is also always a customer contact or event. This concluding event is the moment of truth, in which expectations created in the starting customer event are confronted with the real performance of the organization in the concluding customer event. The key succes factors as defined in step 1 contribute to the resulting satisfaction rate.

The number of identified customer processes should not be to low to impede determination of specifics and not too high to get lost into details. On average, the number of identified processes is somewhere between 10 and 20.

Step 3. Decomposition of customer processes in (parallel and serial) activities [Process/Activity Matrix]

Subsequently, the customer processes are decomposed in elementary, self-contained activities or tasks. The sequence of activities describes how an process is performed from start to end. An activity or task is selfcontained if an individual or group can perform it without reliance on other participants in the customer process, that is can take responsibility for it. An activity operates resembles an object: it can take a specified input and perform some known methods or operations to produce a certain output, which can be input to subsequent activities. An activity has a cost or value adding structure.

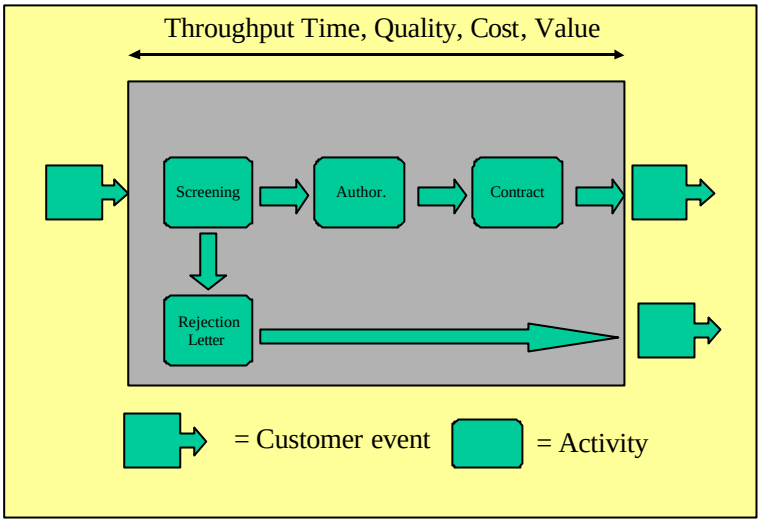

Figure 3. A sample customer process (appointment as a insurance broker) decomposed in activities.

The tasks are related in different ways to constitute the total customer process. The related tasks in a defined customer process have a match between the input and output, where the output of one activity is the input of another activity. The matching between the input and output of activities is called interface management. Specifically in traditional functional organizations this has been a difficult task: for example, the market knowledge of sales persons was hard to translate into design criteria for R&D, because the output was stated in a different language from the input of the next step. By managing the interface in terms of format, content (necessary information exchange) and throughput time of the total process, major improvements can be made. Often the total process throughput time is not determined by the time needed to perform individual activities, but by the lost time of one activity waiting for the other.

Although the exercise of describing customer processes and detailed activities seems trivial, we have found that employees often hold widely different views on how such processes or activities are performed within the organization. When describing the sequence of activities on a very abstract level, everything seems fine, but when going into detail how those activities are actually performed, a lot of confusion arises. Turf battles emerge (who is responsible for what) but in this stage it is important to stick to the description of the sequence of activities, not who is responsible. A clear delineation of the necessary activities to reach a certain customer result is here important.

After describing the sequence of activities, we identify common activities in different customer processes. By exposing such shared activities, redundancy can be identified and reduced. Information sharing can be stimulated through the use of an integral RMS. For example, in a practical application, we found that customer screening was performed in four different places. By administrating the results of the first time the customer was screened in a central file, other processes did not have to duplicate the effort and the customer was not harassed for providing four times nearly the same information.

The number of elementary activities which are used in the customer processes is often suprisingly low, often in the range from 25 to 50. By combining these elementary activities in customer processes, very different results for customers can be achieved. With a few activities widely different customer processes are possible. Sometimes the linear sequence of activities can profit from parallelization: activities are performed whenever capacity is available and don't wait untill they have to be performed.

By specifying elementary activities, their input-operation-output structure and their added value/cost components it becomes possible to consider the question if the organization itself should perform the all the activities that it outsource unattractive activities which are not important to maintain competitive advantage. Although such decisions are not taken lightly, the developments in information technology, specifically the distributed information processing paradigm, open up new possibilities in this area. The interface management with outsourced activities is a key management capability. Activities do not have to be exclusively outsourced to business partners: in some cases the customer can take an active rol in performing such activities. This can lead to cost-effectiveness and a stronger relationship.

Step 4. Identification of business functions who are responsible for performing activities [Responsibility/Activity Matrix]

The task/activity division is linked to the organigram. It is important to make a specific employee (or team) responsible for performing the identified activity and authorize him/her to make decisions regarding this activity. It should be clear to anyone involved in the customer process who is in charge of a specific activity. In this way, it becomes possible to monitor the workflow through the organization and the active management of the activities in order to reach customer results is enabled.

The responsibilities of employees tend to grow when viewed in this way. By making them responsible for activities that are part of more than one customer process, their scope grows and often they have to relate to other people in the organization for interface management reasons. In order to reduce time to complete customer processes, horizontal communication is stimulated. That is employees are empowered to do whatever is possible to jointly finish the customer process as quickly as possible. They don't take problems through the hierarchy, but solve them with their collegues.

Step 5. Description of needed information in order to perform actitivity (Input) and information generated by the activity (Output), which might be needed in other activities [Activity/Information Matrix]

Employees need information to perform elementary activities. The RMS makes this information available at the place and moment when it is needed. The corrolary of this statement is that after performing the activity, some information has to be registred to enable process monitoring or to generate information for future activities. In this way, knowledge regarding the status of customer processes and customer information is leveraged throughout the organization.

As with the activities in relation to the processes, a lot of information items is used redundantly in various activities. Some information items may be specific to a certain activities, but most of the information is used throughout the customer processes. Enormous gains in efficiency can be reached by storing those items in a central accessible system. By using the RMS as a customer intelligence system, all employees contribute to the expanding knowledge base. Because various employees (like salespersons, service personnel, account management, product development) tend to have different kinds of contacts with customers, the integration of all those varied information sources can enhance a complete picture of customer needs, wishes and satisfaction. The RMS should have facilities to store different kinds of formats, ranging from structured data items to very unstructured ones (eg. comments, drawings).

Inputting information to the RMS is often considered a burden. It must be clear that by storing the information in the future more effective or efficient action can be taken. A general rule is that information that is not used anymore should not be stored into the system. The system only works when all involved employees jointly take their part in keeping the systems content up-to-date and accurate. The customer may have contact with various employees and all involved have to know how each individual contact was handled. After all, the employee to whom the customer is talking represents the total organization at that moment. The organizational culture and evaluation system has to reflect the fact updating the RMS is part of the job description and responsibilities.

Step 6. Definition and implementation of a customer attitude program, along with a training on an relationship management system methodology

After a formal screening of the process description and responsibilities structure by general management, the system is modified to represent the adopted customer management philosophy. The system is tuned to accomodate the prevailing customer strategy and to support the identified customer activities. The responsibility/activity matrix is translated to users rights. That is, upon login to the RMS, screens and data access are adapted to the specific activities that user is performing. The identified customer processes are translated into a workflow that is followed by the system. Ideally, the workflow definition (or sequence of activities) leads to a sequence of windows in the system in which the necessary context dependent information is presented. The user is prompted to input the necessary information for subsequent activities. By following the systematic workflow, consistent performance in the eyes of the customer can be guaranteed.

Employees are trained, both on the customer management procedures and the supportive technology. This is especially important, because the introduction of the RMS, along with the definition of organizational procedures through the process modelling phase, often brings changes in the responsibilities and tasks of employees. The focus is brought on servicing the customer, and this can be a big attitudinal change. It is therefore important to phase the implementation. After a pilot, where the system and procedures are extensively tested, the system is gradually rolled out to the total organization. Implementation guidance by dedicated project team members should be given all the way. In this way experiences of first users can be transferred to subsequent users.

After implementation it is important to monitor system use, employee and customer satisfaction on a regular basis. The RMS is a dynamic system, which constantly grows and adapts to changing business circumstances. The effort never finishes, but when strategic, organizational and technological issues stay aligned, the investment will certainly pay off.

Conclusions and future research.

In order to develop an effective customer relationship strategy, the efforts of different parts of the organization have to be integrated. We have found that by using the process model, an effective integration of technological, organizational and strategic issues regarding relationship management becomes possible. The process model constitutes an effective methodology for the implementation of relationship management systems. The relationship management system becomes a tool through which individual employee knowledge is leveraged in order to enable the total organization to become focused on establishing and mantaining enduring relationships with selected customers. By enabling customized approaches to customers, which should lead to higher LTV, the investments made in the technology should reap significant benefits.

References.

Blattberg, Robert C. and Glazer, Rashi, 'Marketing in the Information Revolution', in: *The Marketing Information Revolution*, eds. Blattberg, R.C., Glazer, R. and Little, J.D.C., Harvard Business School Press, Boston, Massachusetts, 1994.

Boman, Magnus, Bubenko jr, Janis A., Johanesson, Paul and Wangler, Benkt, *Conceptual Modelling*, Prentice Hall Series in Computer Science, Prentice Hall, London, 1997.

Boulding, William, Kalra, Ajay, Staelin, Richard and Zeithaml, Valarie A., 'A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions', *Journal of Marketing Research*, Vol. XXX, February 1993, pp. 7-27.

Cross, Richard and Smith, Janet, *Customer Bonding - Pathway to lasting customer loyalty*, NTC Publishing Group, Lincolnwood, Illinois USA, 1995.

Davenport, Thomas H., *Process Innovation - Reengineering Work through Information Technology*, Harvard Business School Press, Boston, Massuchusets, 1993.

Davidoff, Linda L., *Introduction to Psychology*, McGraw-Hill, New York, 1987

Davidow, William H. and Malone, Michael S., *The Virtual Corporation: Structuring and Revitalizing the Corporation for the 21st Century*, Harper Collins, New York, 1992.

Davies, John M., *The Essential Guide to Database Marketing*, McGrawHill Book Company, 1992.

Davis, Stan and Meyer, Christopher, *Blur - The Speed of Change in the Connected Economy*, Capstone Publishing Limited, Oxford, UK, 1998.

Deighton, John, Peppers, Don and Rogers, Martha, 'Customer Transaction Databases: Present status and prospects', in: *The Marketing Information Revolution*, eds. Blattberg, R.C., Glazer, R. and Little, J.D.C., Harvard Business School Press, Boston, Massachusetts, 1994.

Fine, Charles H., *Clockspeed - Winning Industry Control in the Age of Temporary Advantage*, Perseus Books, Reading, Massachussets, 1998.

Furlong, Carla B., *Marketing for Keeps - Building Your Business By Retaining Your Customers*, John Wiley & Sons, Inc., New York, 1993.

Glazer, Rashi, 'Marketing in an Information Intensive Environment: Strategic Implications of Knowledge as an Asset', *Journal of Marketing*, Vol. 55, October 1991, pp. 1-19.

Hagel III, John and Armstrong, Arthur G., *Net Gain*, Harvard Business School Press, Boston, 1997.

Graham, Ian, *Object Oriented Methods*, Second Edition, Addison-Wesley Publishing Company, Wokingham, England, 1994.

Hammer, Michael and Champy, James, *Reengineering the Corporation - A Manifesto for Business Revolution*, Nichalos Brealey Publishing, London, 1995.

Henning, Kay, *The Digital Enterprise - How Digitisation is redefining business*, Century Business Books, London, 1998.

Higby, Mary A. And Farah, Badie N., ' The Status of Marketing Information Systems, Decision Support Systems and Expert Systems in the Marketing Function of U.S. Firms', *Information and Management*, Vol. 20, 1991, pp. 29-35.

Huizingh, K.R.E., *Marketing Informatiesystemen: Perspectief voor een Ontwikkelingspad*, Academic Service, Schoonhoven, 1992. [in dutch]

Ing, David, and Mitchell, Andrew A., 'Point-of-Sale data in consumer goods marketing: transforming the art of marketing into the science of marketing', in: *The Marketing Information Revolution*, eds. Blattberg, R.C., Glazer, R. and Little, J.D.C., Harvard Business School Press, Boston, Massachusetts, 1994.

Jacobson, Ivar, Ericsson, Maria and Jacobson, Agneta, *The Object Advantage - Business Process Reengineering with Object Technology*, Addision-Wesley Publishing Company, Reading, Massachusetts, 1994.

Kosiur, David, *Electronic Business - How Online Transactions Can Grow Your Business*, Microsoft Press, Strategic Technology Series, Redmond, 1997.

Lazer, William, LaBarbera, Priscilla, MacMachlan, James M. and Smith, Allen E., *Marketing 2000 and Beyond*, American Marketing Association, Chicago, Illinois, 1990.

Levitt, Theodore, *The Marketing Imagination*, The Free Press, New York, 1983.

Lilien, Gary L. and Rangaswamy, Arvind, *Marketing Engineering - Computer-Assisted Marketing Analysis and Planning*, Addison-Wesley, Reading, Massachusetts, 1998.

Marder, Eric, *The Laws of Choice: Predicting Customer Behavior*, The Free Press, New York, 1997.

Naumann, Earl and Giel, Kathleen, *Customer Satisfaction Measurement and Management - Using the Voice of the Customer*, Thomson Executive Press, 1995.

Peppers, Don and Rogers, Martha, *The One to One Future, Building Relationships One Customer at the Time*, Bantam Doubleday Dell Publishing Group Inc., New York, 1993.

Peppers, Don and Rogers, Martha, *Enterprise One to One - Tools for Competing in the Interactive Age*, Bantam Doubleday Dell Publishing Group Inc., New York, 1999.

Reichheld, Frederick F. with Teal, Thomas, *The Loyalty Effect - The Hidden Force Behind Growth, Profits, and Lasting Value*, Harvard Business School Press, Boston, Massachussets, 1996.

Schmitz, John, 'Expert Systems for scanner data in practice', in: *The Marketing Information Revolution*, eds. Blattberg, R.C., Glazer, R. and Little, J.D.C., Harvard Business School Press, Boston, Massachusetts, 1994.

Schwartz, Evan I., *Webonomics - Nine Principles for growing your business on the world wide web*, Penguin Books, London, 1997.

Shaw, Robert and Stone, Merlin, *Database Marketing*, Gower Publishing Company, Aldershot, England, 1988.

Stalk, George and Hout, Thomas M., *Competing Against Time - How Time-based Competition Is Reshaping Global Markets*, The Free Press, Collier MacMillan Publishers, New York, 1990.

Stewart, Thomas A., *Intellectual Capital - The New Wealth of Organizations*, Doubleday/Currency, New York, 1997.

Tapscott, Don, *The Digital Economy - Promise and Peril in the Age of Networked Intelligence*, McGraw-Hill, New York, 1996.

Wallis, Louis A., 'Decision-Support Systems for Marketing', *Technical Report 923*, The Conference Board, 1992.

Whiteley, Richard C., *The Customer-Driven Company: Moving from Talk to Action*, Addison-Wesley Publishing Company, Reading Massachusetts, 1991.

Wierenga, B., van Campen, P.A.F.M., Huizingh, K.R.E., Oude Ophuis, P.A.M., 'Marketing Decision Support Systemen in Nederlandse Bedrijven', *Tijdschrift voor Marketing*, May 1992, pp. 30-38. [in dutch]

Wikström, Solveig and Normann, Richard, Knowledge and Value, *An New Perspective on Corporate Transformation*, Routledge, New York, 1994.

Stone, Merlin and Woodcock, Neil, *Relationship Marketing*, Kogan Page, London, 1995.

Zangwill, Willard I., *Lightning Strategies for Innovation-How the World's best firms create new products*, Lexington Books, Maxwell MacMillan Int., New York, 1993.

Zeithaml, Valarie A., Berry, Leonard L. and Parasuraman, A., 'The Behavioral Consequences of Service Quality', *Journal of Marketing*, Vol. 60, April 1996, pp. 31-46.

Zeithaml, Valarie A., 'Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence', *Journal of Marketing*, Vol. 52, July 1988, pp. 2-22.