

# Conceptual Foundations of Customer Relationship Management Systems - with Special Consideration of the Financial Services Sector

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## Abstract

Customer relationship management systems are introduced in many (especially service) companies to support relationship marketing. The frequently observed failure of such projects is attributed to a lack of or incorrect alignment in the analysis phase, i.e. specification of the strategies and processes to be implemented, which has become an accepted and perfected component of the implementation process for other types of business software. Despite the fact that customer relationship management strategies and processes have been presented, they continue to be transaction-oriented rather than relationship-oriented in many cases. In this article, the problems involved are analyzed based on examples from the financial services sector, and relationship-oriented strategies and processes are outlined. The analysis is based on the findings of a two-year collaboration project with six medium and large-sized retail banks.

## Key Words

Customer Relationship Management (CRM), process architecture, relationship management, standardized business software

## 1 Introduction

Mass production aims at minimizing production costs by efficiently producing large numbers of products with uniform features and quality. Customization aims at maximizing customer satisfaction by tailoring products to individual specifications. Mass customization aims at combining mass production principles with customization principles, thereby optimizing both production costs and customer satisfaction.

In this article, we focus on the customization aspect of mass customization. A prerequisite for customization is comprehensive knowledge about customers. Since single transactions and single interactions provide only partial customer knowledge fragments, customer relations must be maintained over longer time periods in

order to allow customer knowledge to accumulate and successively reach a level that supports effective customization.

As a consequence, marketing since the mid 1980s at the latest has no longer merely concentrated on the design of individual interactions but has also considered or even focused on the design of the entire customer relationship (see e.g. Dwyer / Schurr / Oh 1987; Rogers / Peppers 1994; Peter / Schneider 1994). Unlike transaction marketing, which considers the individual transactions in isolation and where the emphasis is on winning customers and selling, relationship marketing therefore concentrates on the long-term maintenance of the customer relationship, i.e. customer retention (Schulze 2000, 12-13).

Roughly since the mid 1990s Customer Relationship Management systems (CRM systems) have been available as configurable standard business software for the collection, analysis and evaluation of information to support front-office processes in marketing, sales and service. Examples of CRM systems in the form of standard business software are Siebel, Tacton, Uniquare, Logica or Frontrange. The aim of CRM systems is to help improve and/or handle sales development, customer retention and interactions with customers more efficiently (Schulze 2000, 18).

In the financial services sector the use of CRM systems is seen as promising particularly high potential. On the one hand, the services of this sector have a high information content, which means that the data created through interaction with the customer offer great potential for obtaining information which can be used for targeted marketing. On the other hand, these services are entirely or partly handled electronically, thus making it possible to automate and integrate marketing and services in some areas at least. Moreover, at least in retail banking, a large number of customer relationships are maintained and a large number of services provided, making it possible to reliably classify customer relationships and derive (and utilize) reference solutions. For these reasons, growth in the level of investments in CRM systems in the financial services sector is disproportionately high. In 2004, Gartner expects to see a global CRM market volume of 1 billion US dollars for financial services alone (Seeger 2001, 99-100).

The main problems which CRM introduction projects have to overcome in the financial services sector according to (Seeger 2001, 100-101) are the breakup of vertical, product-oriented processing structures (so-called “product silos”), the integration of legacy applications and the ability to quantify and monitor project impacts across the boundaries of individual business units. Many CRM implementation projects prove to be unsuccessful because the form of customer relationships assumed in the standard business software fails to match reality in the company concerned: Often important functionalities like the future-oriented evaluation of customer relationships are not supported or the software (or its introduction process) fails to address the cross-divisional and cross-functional character of CRM (Pep-part 2000). “Organizations need to understand the theoretical and practical implications of the business perspective of CRM before embarking upon a CRM system project. [...] To be successful, CRM projects need to be viewed as more than the implementation of IT” (Light 2001, p.1239).

The approach adopted by companies for many years now when introducing business software systems – particularly those implemented in the form of standardized software – has been first to specify strategies and business processes from the business standpoint and then to configure the standardized software on this basis. For CRM, however, this business foundation in the sense of relationship management strategies or processes has been far less explicit or far too transaction-oriented.

The aim of this article is to outline the conceptual foundations of CRM based on examples from the financial services sector and thus contribute to the creation of a reference basis for CRM implementation projects. Only by CRM systems which are designed properly and introduced successfully, sufficient customer knowledge can be accumulated in order to support customization effectively.

Following this introduction, the various types of CRM systems will be analyzed, an architecture model will be presented, and suggestions for the introduction process of CRM systems will be investigated in section 2. These findings could provide pointers to conceptual foundations. In the third section, the potentials of CRM to be realized from the point of view of the company and the customer will be systematized in the sense of a requirements analysis. Possible conceptual foundations of CRM at the level of strategy and business processes are proposed in section 4. In the fifth and final section, the results of this article are summarized and possible follow-up issues are discussed.

## 2 Customer Relationship Management Systems

### 2.1 Roles of CRM systems in the information systems architecture

Since this paper focuses on the **conceptual** foundations of CRM, our intention is not to analyze CRM systems in respect of their implementation components (e.g. processes vs. knowledge structure vs. basis (Schmid / Bach / Österle 2000, 23), but instead with regard to their different roles in the information systems architecture (partly after Systor 2001).

- **Operational CRM:** Information systems are used to automate campaigns, loyalty programs and sales processes as far as possible.
- **Analytical CRM:** Information systems are used to support the identification of possible customer-product assignments (“leads”). The tasks of analytical CRM also include the integration of customer information across all products and channels as well as the prediction of customer behavior.
- **Collaborative CRM:** Information systems are used to support individual customer communication, the creation of individualized offerings as well as to process customer interactions using a wide range of channels.
- **Strategic CRM:** Information systems are used for planning, checking and revising profitability analyses, segmentations, channel assignments and campaigns.

Actual information systems architectures in practice (e.g. Williams 2000; Seeger 2001, 103; Systor 2001) encompass operational, analytical and sometimes collaborative CRM. These information systems are frequently arranged as components of a “closed loop” control system (Systor 2001). The absence of strategic CRM in such architectures – alongside the considerations described in the introduction – is a further indication of the necessity for a more intensive analysis of the conceptual foundations of CRM systems.

For the purposes of reconstructing the business foundations of CRM it should be emphasized that in particular the planning, checking and revision of profitability analyses, segmentations, channel assignments and campaigns need to be addressed.

### 2.2 Procedural models for structuring the introduction of CRM systems

Procedural models for the introduction of CRM standardized business software can be helpful when it

comes to reconstructing the conceptual foundations of CRM. Particularly in the context of introducing business software, early phases envisage the development of conceptual foundations and the successive translation of this specification into the parameterization of the standardized business software (Alpar et al. 2000, 283-295). Schulze (2000a, chapter 4; 2000b, 58-67) differentiates between strategy-, process-, system- and knowledge-oriented approaches to the introduction of CRM systems. Strategy-oriented approaches take the definition of a CRM strategy as the starting point which through critical CRM success factors and requirements analyses for the CRM system forms the basis for business cases, business processes and business objects in CRM. Process-oriented approaches focus on the customer-oriented redesign of the enterprise, which is very closely related to organizational development and change management. System-oriented approaches are very strongly oriented toward standardized business software and concentrate on the systematic introduction of the CRM software system. Knowledge-oriented approaches focus on the iterative learning process which results from the integration and analysis of customer information. Schulze suggests a process-oriented approach which starts with the customer potential and customer process analysis, develops CRM processes and the respective process management and transforms these specifications into an appropriate CRM system configuration (Schulze 2000a, Chapter 5; Schulze 2000b, 71-83).

For the purposes of reconstructing conceptual foundations for CRM, the evaluation of CRM system introduction methods investigated by Schulze shows that activities such as e.g. customer information integration, customer satisfaction analysis, customer needs-oriented segmentation, product segment-channel planning and interaction configuration (Schulze 2000a, 65-76) clearly represent major components of strategic CRM. Nonetheless, these components are not systematized and explicated.

### 3 Requirements for IT-supported Customer Relationship Management

The goal of relationship management is to forge, maintain and utilize “personal” relationships with profitable customers efficiently (Schulze 2000a, 17). For this reason, the introduction of CRM systems will only achieve sustainable success if its use brings benefits from the standpoint of both the company and the customer, i.e. if added value is also created for customers compared with traditional, transaction-centered marketing and sales strategies.

#### 3.1 Requirements from the company’s standpoint

The advantages of CRM from the company’s standpoint include those with a technical bias (e.g. data integration, automation of marketing or sales processes) as well as those with a business bias (e.g. extension and consolidation of profitable customer relationships). Reisinger (2001, 16+17), for example, distinguishes between potential management (e.g. recognition of customer behavior, identification of cross-selling potentials), multi-channel marketing (e.g. support for cross-channel sales processes), campaign management (e.g. optimized direct marketing measures) and data management (e.g. building up an integrated customer database). Since the technical effects are ultimately aimed at realizing business potentials, the description of CRM potentials from the company’s standpoint given below is based on the business perspective:

- **Sales development:** CRM enables prospective new customers to be targeted with individualized – and thus attractive – offers, thus increasing the effectiveness of sales development (Schulze 2000a, 52-54).
- **Extension of profitable customer relationships:** Customer relationships pass through different phases which, following initial unprofitability due to sales development costs, are characterized by increasing profitability as a result of decreasing price sensitivity, cross-selling and up-selling (Schulze 2000a, 61-63; Swift 2001, 43). Profitable customer relationships must be kept profitable as long as possible or even made more profitable. CRM can contribute towards achieving that goal through the identification of additional sales potentials and/or by preventing the migration of profitable customers through the “individualization” of pricing, discounts and the like.
- **Transformation of less profitable into profitable customer relationships:** As a result of high sales development costs, short retention period and/or low sales, customer relationships can also reach a stage of little or no profitability after a certain length of time. CRM helps to identify customer relationships of this kind and make them profitable through cross-selling or up-selling.
- **Recognition and termination of unprofitable customer relationships:** Many customer relationships cannot be made profitable because there is no reaction to company activities. CRM can help to identify customer relationships of this kind and end them by changing the terms and conditions or, if necessary, by not renewing or terminating the contract.

In order to be able to utilize the business potentials of CRM outlined in the previous section, however, there are certain conditions which have to be met or created:

- **Holistic view of customer relationships:** Individual transactions have to be aggregated across all products and channels to form a cumulative customer value (together with a forecast of the customer lifetime value) in order to create a suitable basis for evaluating a customer relationship. Equally, in many sectors it is not individual customer relationships but their aggregation across all relationships within a family, a community or the like to form a “customer cluster” (Reisinger 2001) which constitutes an appropriate basis for evaluating customer relationships.
- **Cost and profit transparency:** From the description of the potentials of CRM together with the explanations of the holistic view of customer relationships it is evident that the profitability of customer relationships has to be evaluated permanently and in real time using life cycle and relationship network models. The prerequisite for an evaluation of this kind is maximum cost and profit transparency.
- **Targeted marketing:** When addressing potential customers, the finer the targeting in respect of their current product portfolio, present phase in life, or perhaps current events in their lives or current transactions, the greater the probability of successful cross-selling, up-selling or initiation of a customer relationship. It is only with the aggregation of all the available information along with a real-time evaluation of current change indicators, a very high number of segments and finally effective campaign support that systematic and targeted marketing becomes possible.
- **Creation of customer lock-in:** Against a background of comparable standards of professionalism among competitors, a high level of market transparency for consumers and decreasing customer loyalty, it has become virtually impossible to create long-term customer relationships other than through effective customer retention programs. It is only when an attractive compensation is granted in the form of bonuses, price reductions or in particular individualized special services, that attractive customers start to show lower price sensitivity, greater loyalty, greater dependence and/or a willingness to dispense with new customer incentives from competitors.

### 3.2 Requirements from the customer’s standpoint

As a basic principle, both the individualization of goods and services as well as the comprehensive coverage of customer processes are perceived as added value by customers [Winter 2002]:

- **Individualization of offerings:** The more specifically an offering caters for the current product portfolio, the current phase in life, life events which may have taken place or transactions which may have been performed by the customer, the greater the likelihood of the offering being seen as attractive. When CRM puts companies in a position to make attractive offers, this is also viewed as positive from the customer’s standpoint. For this reason, telecom providers, for example, have started offering profitable customers tariffs based on their individual telecommunication habits. These tariffs are perceived as attractive because they primarily provide discounts on frequently used connections.
- **Comprehensive coverage of needs:** “Consumers may not use the term, but what they really want is ‘aggregation’ – one-stop access to all their financial data” (Berinato 2001). By aggregating bank accounts, integrating planning and evaluation functions, giving access to a wide range of information on financial services from different providers and, if necessary, community functions such as discussion forums or product evaluation, it is possible to provide comprehensive coverage of financial processes for consumers. As an example, yourhome.ch integrates a wide range of financial services, information services, tools (e.g. design, location and evaluation tools) and market overviews associated with the “home purchase” process in Switzerland (Schmid / Erni-Grüter / Bach 2001).
- **Multi-channel capability:** Forecasts are based on the assumption that only roughly 20% of retail bank customers will want to access financial services exclusively through traditional channels (“branch traditionalists”) or exclusively through electronic channels; But 60% retail bank customers will prefer similar access to financial services through a range of different channels, i.e. from the branch, ATMs and telephone banking from a fixed or mobile network to PC or PDA-assisted electronic banking. It is only through multi-channel-capable CRM, i.e. the conceptual separation of product processing, channel processing and CRM (Winter 2000) that it is possible to ensure that customers are treated consistently and receive consistent offerings despite access through a range of different channels (Grover / Riempp 2001).

The prerequisites for utilizing these potentials from the customer's standpoint differ significantly from the prerequisites from the company's standpoint: the aggregation of information and the individualization of offerings reach their limits in the latter case as soon as the impression arises that the customer is being watched by "big brother" or when information is evaluated outside of the permitted application area (e.g. in company networks) or completely without the customer's consent. In the context of holistic customer process support it must be borne in mind that there has to be genuine choice and objective advice – precisely because of the high level of self-organization among the communities which are formed – (i.e. a company's possibilities of highlighting its own offerings are limited) and that a certain percentage of consumers and (e.g. very specific) consumer processes cannot or do not want to be reached through pre-structured, holistic support.

## 4 Conceptual Foundations of Customer Relationship Management Systems

Specification of the conceptual foundations of CRM systems is based on the framework comprising four main levels and referred to as the "banking architecture of the information age" (see Fugmann et al. 1999; Leist / Winter 1999; Leist / Winter 2000; Heinrich / Leist 2000; Leist 2002). This framework has proved to be successful for structuring a wide range of areas in banking business. It implies the following procedural model:

- At the **strategy level** it is necessary to specify from the business perspective how customer relationships are to be designed on principle and what role will be assigned to them in the respective business model (the "what" of business modeling).
- At the **process level** – again from the business standpoint – it is necessary to specify which activities and which performance indicators can be used to plan, organize and control the target customer relationships outlined in the previous step (the "how" of business modeling).
- At the **application level** the components of the information system are specified from a business perspective, i.e. the customer relationship processes identified at the process level must be transformed into a meaningful information system structure. If a CRM system already exists in the form of standardized business software it must be configured so that customer relationship processes are supported as far as possible without overlaps and gaps.
- Finally, at the **software level** the application specifications from a business perspective have to be

transformed into suitable software module / component specifications. The prime focus here is no longer an overall architecture without overlaps and gaps but an optimal level of reuse and integration. If CRM software modules or components already exist in the form of standardized business software they must – where necessary – be integrated with other software modules and components as consistently as possible.

### 4.1 Strategy Level

The strategy specification specifies amongst others the core services (in respect of the supported customer processes), the type of sales contacts, the sales policy, the price policy, the brand concept as well as targeted purchaser and customer groups (Heinrich 2000, 43-50). By these specifications, fundamental foundations for the CRM strategy are already created. Within these boundaries it is now necessary to specify "what" the relationship management should produce. First of all, the transaction-oriented information available at both the contract and product levels must be integrated not just at the level of customer relationships but beyond this to the level of customer clusters. A customer cluster is defined as a set of customer relationships which are to be maintained jointly because interactions with one of the customer relationships affects the other customer relationships due to ownership structure, family structures, partnerships and the like. For example, the retail customer relationship with a small or medium-sized businessman must be linked with the business customer relationship of the respective company, and the retail customer relationship of a student or prospective heir must be linked with the private banking relationship of a wealthy parent or relative.

Once an integrated, overall picture of the customer clusters has been created they can then be evaluated. The "value" of a customer cluster in the sense of a "lifetime value" can be derived for example as the net present value of the predicted transaction contribution margins over the predicted residual lifetime of the customer relationships contained in the cluster. It is frequently the case that the long-term analysis reverses the traditional customer relationship evaluation: for students, individual customers and wealthy senior citizens, for example, a lifetime evaluation produces completely different results to a short-term analysis (Petzel 2001). If the values of the customer clusters are known, their distribution can be used to form segments. Appropriate measures can then be assigned to these segments if the predicted profits from the measures for the specific segment do not exceed the predicted costs of the measures for the specific segment.

For each segment an analysis is now performed in which costs and profits are forecast for various standard measures (e.g. ending the relationship, up-selling, individualizing the offering). At some point in time break-even will be achieved for every measure in every segment as a result of decreasing average measure costs per customer cluster reached and the (at the least) constant average measure returns per customer cluster reached. However, the difference in segment sizes together with the segment curves will determine whether the respective measure can actually be put to meaningful use in the segment considered.

The combination of measures identified as promising success leads to “standard” strategies for the respective segment. On this basis it is quite possible for different strategies to be derived in different companies for similarly defined segments as the number of customer clusters per segment as well as the cost and profit curves will be specific to the company.

## 4.2 Process Level

At the process level the results of the strategy level (“standard” strategies, e.g. prevent customer migration in segment X) defining the “what” must be specified so that their implementation can be structured, organized and managed.

The main processes of CRM are repeatedly stated as being marketing, sales and service (e.g. Schmid / Bach / Österle 2000, 24-26; Schulze 2000a, 18-19; Systor 2001). Nonetheless, a clear assignment of these processes to basic CRM processes is not possible: thus, campaign management, for example, can be assigned to both marketing and sales as campaigns can develop new markets as well as addressing existing customers, e.g. for cross-selling.

We start with distinguishing between management, business and support processes in relationship management at the top level of abstraction (cf. e.g. Rüegg-Stürm 2000). Zellner (2003) identified “evaluate customer relations” and “select customer relations” as most important classes of support processes. In the same study, “manage relationship design instruments” and “evaluate & select relationship design instruments” are identified as the most important management process classes. By applying basic process identification patterns to customer relationships, Zellner (2003) identifies “create”, “maintain”, “destroy”, “communicate” and “modify” as basic business process classes dealing with relationship design instruments.

Although being completely specified for selected customer segments and relationship design instruments by Zellner (2003), it is obvious that these generalized process classes need to be adapted to actual business models in order to create a conceptual foundation for CRM

systems configuration. As a result of various workshops with executives from retail banks, the following CRM process structure for retail banking has been compiled:

- **Management processes:** Define relationship strategy according to customer types, relationship owners and relationship tools; manage business processes in line with goals defined in the CRM strategy
- **Business processes:** Operational relationship management (in the sense of handling active and passive customer contacts); complaints management (in the sense of a process of learning from complaints)
- **Support processes:** Integrate transaction and contact information; develop and update behavior models (e.g. “churn management”); uncover events (“event detection”), identify and update segments; identify activities which promise success (“lead generation”), measure the profitability of customer clusters; measure the profitability of products, channels and contact points; carry out campaigns

In contrast to Zellner’s more rigorous approach, this CRM process structure reflects a pragmatic yet not transaction-oriented approach. Despite the fact that some of these processes are developed in many CRM projects, as yet no reference processes have been published that do not mix relationship- and transaction-oriented design.

Alongside reference processes in the narrower sense, there are also conceptual information models for the representation of customer clusters, life events, contact and transaction life cycles as well as correlations between transactions, contacts and promising activities to be specified at the process level. In addition to published, straightforward customer life phase models (see e.g. Swift 2000), reports on complex, sophisticated behavior models are to be found (e.g. Williams 2000) which, however, were also developed as individual solutions and have yet to be standardized.

On the basis of relationship-oriented CRM processes and information models it is then possible to perform a systematic assignment of standardized business software components and data structures to activities and information objects. IS architectures and procedural models (e.g. Winter 2000; Choinowski 2002) already exist for this purpose and appear to be sufficiently general to allow their application for CRM.

## 5 Summary and Outlook

This article attempted to analyze the problems involved in developing a “pure” relationship-oriented rather than a traditional, transaction-oriented specification for CRM. Only by CRM systems which are designed prop-

erly and introduced successfully, sufficient customer knowledge can be accumulated in order to support customization effectively.

Alongside a general business engineering framework, the basis of these considerations was also the analysis of CRM system architectures and CRM introduction methods. On this basis, a more rational "management" of customer relationships was identified from the company's standpoint and, from the customer's standpoint, individualization, comprehensive coverage and channel independence as the major potentials of IT-supported CRM. If these potentials are to be utilized, however, state-of-the-art information logistics, an appropriate organization and focused CRM strategies to secure customer loyalty are necessary from the company's standpoint. From the point of view of the customer, informational autonomy, the fact that complex customer processes cannot be fully standardized and the decreasing willingness to be bound to certain vendors are to be borne in mind.

At the strategy level a method was outlined to determine segment-specific "standard" strategies for CRM. The discussion on CRM processes and models (e.g. behavior or information models) made it clear that the respective generalization efforts are only at the beginning. This applies in particular for the representation of customer clusters, life events, contact and transaction life cycles as well as correlations between transactions, contacts and promising sales activities. The absence of a standardized method for measuring the profitability of CRM measures also prevents a better safeguard for CRM introduction projects and continuous CRM operation.

There is nonetheless still the general problem that networked business architectures and the increasing virtualization of value networks are calling the holistic approach to relationship management into question not only from the organizational point of view but also in legal terms. An apt description of the problem on the organizational side is the question "who owns the customer?", to which there are unfortunately no simple answers in a value network. In legal terms the required high level of integration of transaction and relationship information across company boundaries is virtually impossible.

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