Advancing CRM Initiatives with Knowledge Management[1]

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Abstract

In recent years, companies have integrated their customer relationship management (CRM) and knowledge management (KM) efforts because they realize that KM plays a key role in CRM success. In this article we analyze the performance outcomes of these efforts. For this purpose, we will present a cross-case analysis which is complemented by quantitative data derived from a survey among CRM executives in the German-speaking area. The case studies that we conducted can be considered "good practices" that enhance CRM initiatives by applying knowledge *for*, *from* or *about* customers. From the case studies' findings we identify key success factors for implementing knowledge-based CRM initiatives by means of an orchestrated approach that considers strategy, processes, systems and change management aspects. Apart from these practical recommendations, we also discuss further research issues in the domain of customer knowledge management.

Keywords: Customer Relationship Management, Knowledge Management, Customer Knowledge Management.

Introduction

Many companies have been eager to combine customer relationship management (CRM) and knowledge management (KM) initiatives. These efforts have been labeled 'customer knowledge management' (CKM) or 'knowledge-enabled CRM' (Gibbert, Leibold and Probst, 2002; Geib and Riempp, 2002; Gebert, Geib, Kolbe and Brenner, 2003). We see CKM as the utilization of knowledge *for*, *from* and *about* customers in order to enhance the customer-relating capability of organizations. Recent research shows that an organization's KM capabilities are the most significant critical success factor affecting CRM impact (Croteau and Li, 2003). However, due to a history of poor solutions coupled with technology failures, many companies have a hard time justifying CKM initiatives in today's business world (Rigby, Reichheld and Schefter, 2002; Yu, 2001). Nevertheless, the idea of combining KM initiatives with CRM activities is still alive as it has also proven to bring about considerable benefits when done correctly (Gibbert et al., 2002). Therefore, the research question we want to answer with this contribution is: How can companies successfully utilize knowledge *for*, *from* and *about* customers to achieve superior performance in CRM processes? In order to address this question, we applied a multiple case study design. At the same time, we backed our research with findings derived from a survey among executives of renowned companies in German-speaking regions. The survey's results have been our research's starting point in order to get profound insights into the actual status quo of knowledge-based CRM initiatives within companies.

We present the theoretical foundation of this paper in the following paragraph. After an outline of our research approach we introduce our

survey's results of CKM initiatives' status quo within organizations. Subsequently, three case studies illustrate "good practices" in either managing knowledge *for*, *from* and *about* customers. From this we suggest implications for practice by means of a managerial framework and conclude with an overview of this paper's limitations and further research issues.

Theoretical Foundation

The Concept of CRM

In general, two core developments can be identified which finally led to the emergence of CRM. One of these developments was the shift from a focus on transactions to the establishment, marketing and nurturing of relationships with customers (Bose and Sugumaran, 2003). Companies that pursue a CRM approach focus on customer retention rather than on single sales (Parvatiyar and Sheth, 2000; Webster, 1992). Formally, relationship marketing can be characterized as an integrated effort to identify, maintain, and build a network with individual customers, and the strengthening of this network for both sides' mutual benefit (Shani and Chalasani, 1992).

Due to the different influences leading to the development of the CRM concept, there are also many divergent perspectives on CRM (Zablah, Bellenger and Johnston, 2004). The different dimensions have been widely discussed by marketing practitioners and scholars alike (e.g. Bradshaw and Brash, 2001; Massey, Montoya-Weiss and Holcom, 2001). For our research purposes, we follow a process-oriented approach by Shaw and Reed (Shaw and Reed, 1999), who define CRM as an interactive process achieving the optimum balance between corporate investments and the satisfaction of customer needs in order to generate the maximum profit.

A CRM Process Framework

Many researchers have addressed the lack of an integrated and comprehensive framework in the context of CKM (e.g. Bose and Sugumaran, 2003; Winer, 2001; Massey et al., 2001). For our purposes, we deployed a process framework which describes the business processes relevant to CRM and KM initiatives (see Figure 1). The framework is the result of ongoing research combining theoretical conceptualization efforts with practical application. The theoretical findings elaborate on eight years of case study and action research that have been introduced to the research community (for further discussion see Gebert et al., 2003; Geib, Reichold, Kolbe and Brenner, 2005; Bueren, Schierholz, Kolbe and Brenner, 2005; Geib, Kolbe and Brenner, 2004; Gebert, Geib, Kolbe and Riempp, 2002). Additionally, in collaboration with research partners, the research results have been discussed and validated in practice.

The framework comprises all identified business processes that are relevant to successful CRM implementation within an organization. An important characteristic of the framework is that it is geared towards
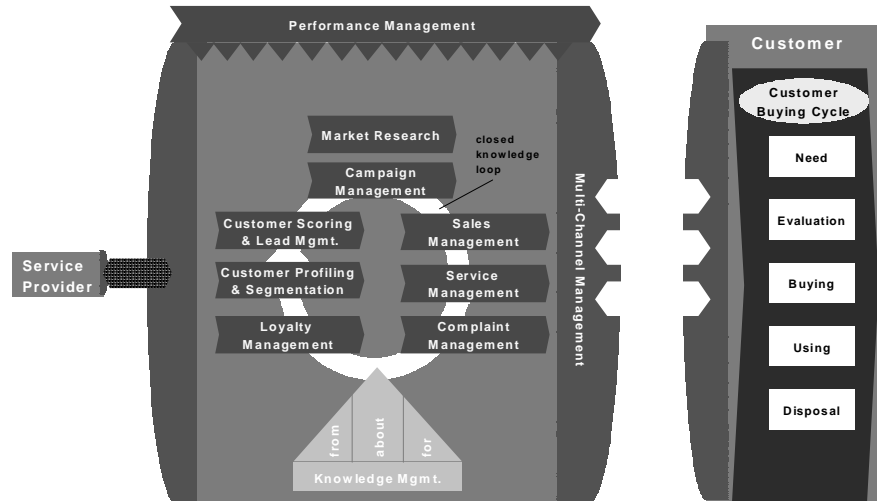
Figure 1: A Process Framework for CRM

customers' needs and desires. Ives and Learmonth apply the concept of the customer resource lifecycle (CRLC) in order to fulfill these needs (Ives and Learmonth, 1984, p. 1197). Österle similarly refers to the concept of the customer process (Österle, 2003, p. 25) which is a sequence of activities performed by a customer in order to satisfy a need or to solve a specific problem (see "Customer Buying Cycle" in Figure 1). Our process framework differentiates between four types of processes which are explained in the following.

CRM Service Processes

This type of process consists of sub-processes with direct customer interaction *designed* for a complete coverage of the customer process. The following processes can be distinguished:

Campaign management is the core marketing process, which puts the ideas of relationship marketing into practice. It can be defined as planning, realization and controlling of marketing activities directed at already known recipients. Usually, marketing campaigns are individualized (Peppers and Rogers, 1993) or aim at specific segments by means of different communication channels. Therefore, campaign management covers the *need articulation* phase of the customer process.

The aims of *sales management* are to find out the needs of potential or existing customers as comprehensive as possible, to advice the customer on possible alternatives for the satisfaction of the identified needs, to provide the customer with an offer, and to close a contract as the final step. Sales management addresses the *need articulation, evaluation and*

buying phases of the customer process.

Service management can be referred to as planning, realization and controlling of services offered in the after-sales phase. Service management corresponds with customer process phases of *using and disposal*.

Complaint management is about receiving, processing and communicating the dissatisfaction articulated by the customer throughout the customer process (Stauss and Seidel, 2002). Complaint management is primarily concerned with the *using* phase of the customer process.

CRM Support Processes

These are processes with direct customer interaction which are *not designed* for a complete coverage of the customer process, but for performing support tasks in the context of CRM. In the context of this process type, two support processes can be identified:

Loyalty management, also known as customer retention management, can be defined as the planning, realization and controlling of measures, which aim at the optimization of the duration and intensity of customer relationships.

The main focus of *market research* is the systematic design, collection, analysis and reporting of data and results relevant for a specific marketing situation (Kotler, 2003, p. 129).

CRM Analysis Processes

These processes consolidate and analyze knowledge collected in other CRM processes. The results of the analysis will be handed over to other CRM processes as well as service innovation and creation processes in order to improve their efficiency.

As opposed to the management of leads, *customer scoring* aims at generating a shortlist of existing customers, which seem to be suitable for the offering of certain services or products. The goals are to exploit cross-selling potentials, to reduce contact costs and to increase customer satisfaction. *Lead management* comprises the consolidation, qualification and prioritization of contacts to potential customers.

Customer profiling is concerned with the analysis of available knowledge about customers in order to classify and characterize each customer individually. As opposed to customer profiling, *customer segmentation* deals with the clustering of homogenous customer groups, which have similar needs and requirements (Kotler, 2003, p. 9).

Feedback and knowledge management are responsible for collecting and analyzing knowledge from the customer, which can be used for the improvement of products and services as well as processes within a company.

CRM Management Processes

These processes comprise all entrepreneurial management tasks for design, control and development of CRM service, support and analysis

processes. In detail, the processes are as follows:

Multi-channel management comprises the integrated and coordinated development, design and control of product and knowledge flows to as well as from customers through different media and channels.

Performance Management is the control process of all CRM processes described above. It enables an integrated control and allocation of resources.

Knowledge Flows in CRM Processes

The CRM discipline's relationship with KM approaches and technologies has widely been recognized as a relevant field of research (Romano and Fjermestad, 2003; Fahey, 2001; Romano, 2000; Winer, 2001; Massey et al., 2001).

As CRM processes can be considered semi-structured or even unstructured, they reveal a high complexity as well as a strong knowledge intensity (Eppler, Seifried and Röpnack, 1999). Since collecting, storing and distributing relevant knowledge for those CRM processes makes the deployment of KM techniques necessary, it is evident that an organization's KM capabilities play a key role in CRM success (Croteau and Li, 2003). In this context, KM can be defined as "the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities." (Quintas, Lefrere and Jones, 1997) Likewise, CKM can be defined as the systematic handling and management of knowledge collected at customer interaction points which is required for the efficient and effective support of business processes (Geib and Riempp, 2002).

As a further concretization of this notion, we distinguish three kinds of knowledge flows that play a vital role in the interaction between an organization and its customers: knowledge *for*, *from* and *about* customers. Firstly, in order to support customers in their buying cycle, a continuous knowledge flow directed from the company to its customers (i.e. knowledge *for* customers) is a prerequisite (Davenport and Klahr, 1998). Knowledge for customers comprises information about products, markets and suppliers (Garcia-Murillo and Annabi, 2002) and is primarily addressed by CRM service processes. This knowledge dimension also impacts the customer's perception of the service quality - which has been identified as an important determinant of satisfactory financial performance (Wang and Lo, 2004; Taylor and Baker, 1994; Spreng and Mackoy, 1996).

At the same time, knowledge *from* customers has to be incorporated by the company for product and service innovation, idea generation as well as for the continuous improvement of its products and services (Thomke and von Hippel, 2002; Kristensson, Gustafsson and Archer, 2004; Chesbrough, 2003). Capturing customer knowledge and involving customers in the innovation process can be achieved in various ways (Gibbert et al., 2002). For example, customers' knowledge about products, suppliers and market trends can be used via appropriate feedback

mechanisms to enable a systematic improvement and innovation of products (Garcia-Murillo and Annabi, 2002; Gibbert et al., 2002).

The collection and analysis of knowledge *about* customers is certainly one of the oldest forms of KM activity in the CRM domain (Reichheld and Schefter, 2000). Besides the customer's master data and past transactions, knowledge about the customer encompasses the customer's present needs and requirements, future desires, connections, purchasing activity and financial capability (Davenport, Harris and Kohli, 2001; Day, 2000). Knowledge about customers is collected in CRM service and support processes and analyzed in CRM analysis processes.

Research Methodology

For our research purpose, we adopted an explanatory multiple-case study approach. In this context, we addressed the questions related to the *"how"* and *"why"* of our research question. We were especially interested in ascertaining *why* CKM initiatives succeed within companies and *how* CKM can enhance the performance of a particular CRM processes. The deployment of case studies in order to generate explanations follows the research approach proposed by Yin (Yin, 2002).

Case Sites

The case data were collected in a study of three Swiss and German companies in the second half of 2004. These sites were chosen for theoretical rather than statistical reasons, and selection was based on two criteria: purposeful sampling (different exposure to customer knowledge, see Table 1) and a willingness to cooperate (Yin, 2002). By analyzing different approaches to CKM, we adapted different views and consequently gained a more complete picture of the possible challenges (cf. Eisenhardt, 1989, p. 537). Table 1 provides a brief overview of the case sites.

Company Characteristic*	Union Investment	Siemens	Credit Suisse
Description	German fund managing company	German electronics company	Swiss universal bank
Total assets/ revenue	• 122 billion assets	• 75 billion revenue	• 800 billion assets
Employees	ca. 2,000	ca. 430,000	ca. 60,000
Business segments	Investment funds, asset management	Information and communication systems and products, trans-portation, energy,	Investment banking, corpo-rate/retail/private banking

		health care, house-hold appliances, lighting, etc.	
Analysed Business Unit (BU)	Whole company	Information and Communication Mobile	Corporate/retail/ private banking
Assets/revenue of analyzed BU	• 122 billion assets	• 11 billion revenue	• 470 billion assets
Customers in analyzed BU	ca. 4 million private and institutional investors	ca. 20 million private and corpo-rate customers	ca. 3 million private and institutional customers
Exposure to Customer Knowledge	Knowledge for customers	Knowledge from customers	Knowledge about customers

* as of 2004; figures taken from annual reports

Table 1: Overview of case sites

The structure for the central component, the semi-structured interviews, was provided by Senger and Österle's case study method (Senger and Österle, 2002). This method describes three generic steps: (a) the old situation and the resulting problem perception, (b) the transformation project as well as (c) the new solution with discussions relating to the costs and benefits. For our research purpose, we adopted the proposed structure in respect of the topic of how CRM processes are enhanced by KM initiatives. The interview questions can be summarized as follows:

- *Business challenges*: In which respect is knowledge *for*, *from*, or *about* your customers needed to improve your products and services?
- *Relevant knowledge aspects*: Which approach to managing customer knowledge did you employ to improve your products and services?
- *Performance outcome*: What are the tangible and intangible results of knowledge-based CRM at your company?

To clarify and elaborate on the case descriptions, they were reconciled with the interview partners, and sometimes required further interviews.

Data Analysis

For the case analysis, we used both *within-case* and *cross-case analysis* of the data (Yin, 2002). The objective of the within-case analysis was to build an explanation of the case by using a deduction and induction cycle. The data's validity was ensured through the use of multiple sources of evidence, the interviewees' reviews of the case interpretations and a chain of evidence provided by the case data. The cross-case analysis was carried

out in order to locate and examine the similarities and differences across the three cases. The objective was to generalize beyond the data and, through this, discover the challenges that play an important role in knowledge-based CRM. These challenges are described and a guiding framework is derived in the concluding section of our paper.

Analysis and discussion of Knowledge-based Customer Relationship Management in practice

Status Quo of Knowledge-based CRM - Results from Our Survey

The goal of our survey was to evaluate the status quo of today's CRM activities with particular regard to critical success factors and common pitfalls. 89 CRM executives in the German-speaking regions (i.e. Germany, Austria and Switzerland) participated in the survey. The study was carried out from July to August 2004. We structured the survey's questions on CRM process implementation according to the process framework for CRM introduced in the theoretical foundation of this paper. We concretized each process category for the participants by providing explanatory commentaries. The *knowledge management* category was explained as comprising two perspectives on the management of customer knowledge within the organizational context: (a) knowledge exchange between customers and the organization and (b) knowledge dissemination within the organization to those entities where it can be reused most effectively. Knowledge itself was defined as capacity for effective action (Senge, 1990; Sanchez, 1997). Table 2 illustrates the findings on the status of implementation for operative CRM processes.

Process Category	Process	Degree of implementation				
		Fully (%)	Mostly (%)	Partly (%)	Hardly (%)	Not (%)
Service processes	Campaign management	17.4	20.9	29.1	18.6	14.0
	Sales management	9.3	41.9	20.9	17.4	10.5
	Service management	6.0	33.2	27.4	17.9	15.5
	Complaint management	19.8	23.3	26.7	15.1	15.1
Support processes	Market research	14.9	26.4	18.4	18.5	21.8
	Loyalty management	6.9	23.0	36.8	19.5	13.8
Analysis processes	Customer profiling & segmentation	17.2	31.0	24.1	16.2	11.5
	Customer scoring & lead management	12.9	20.0	25.9	22.4	18.8
	Knowledge management	1.1	8.0	27.6	40.2	23.1
Management processes	Multi-channel management	5.9	22.3	21.2	25.9	24.7
	Performance management	4.8	19.3	27.7	24.1	24.1

Table 2: Survey findings on CRM processes

Regardless of the distinction between outside acquisition and inside dissemination of customer knowledge, the results of our survey indicate that the topic is not yet being addressed comprehensively. More than 60% of the respondents say they have "not" or "hardly" implemented any processes for managing customer knowledge. Only 9% claim their organization has established such mechanisms "fully" or "mostly".

The domain of KM is thus the least established process category by far. This article cannot provide an empirically valid reasoning for this particular outcome. However, the comments made by the survey participants indicated that firms may refrain from KM initiatives in CRM due to difficulty in visualizing the immediate benefits and short-term pay-offs of such projects. Furthermore, the participants claimed that KM as a term had a negative connotation within their organization and therefore investment decisions were rarely carried out consequently.

The obvious discrepancy between the importance attributed to CKM in theory and its low degree of implementation in practice impelled us to identify and describe successful practices where KM helped to improve CRM processes effectively. The ultimate goal was to derive a guiding framework that may help to overcome the practical challenges associated with the topic. Therefore, in the following sections, we describe how Union Investment, Siemens and Credit Suisse successfully managed to make use of knowledge *for, from* and *about* their customers.

Union Investment – Knowledge support for Union's Customer Communication Center

The case of Union Investment - a large mutual fund company in Germany - illustrates the importance of explicated knowledge for the CRM sub-process service management. At Union Investment, a customer communication center (CCC) integrates the communication channels such as phone, fax and email to serve customers via multiple contact points. Within the CCC, 120 employees serve bank employees and retail customers alike by providing knowledge on a wide range of topics associated with complex financial products.

Business Challenge
Initially, in order to address the needs of their customers, CCC agents utilized information from the different organizational units that were collected and aggregated by an internal information support unit. Having received the required information by the support unit, every CCC employee had to organize his or her content individually. This also meant that new employees did not have access to older information. Subsequently, to address this shortcoming, a knowledge platform was created using basic web technology which offered the same information as could be obtained through email, but with a certain time delay. However, as the amount of content increased, the navigational structure eventually became more and more cluttered. Due

to the lack of a search function, the CCC agents returned to primarily using their personal email folders for information retrieval and not the central knowledge base.

The complicated process of converting documents to a web-based format also generated considerable costs in respect of creating, formatting and publishing content. Furthermore, the prevailing solution inhibited timely publication – a critical aspect in supporting the CCC agents effectively.

Knowledge-enabled Solution

In order to ameliorate the unsatisfying status, Union launched a project aimed at eliminating the shortcomings concerning the current design of knowledge presentation and the unwieldy navigational structure that made searching for content impossible. These deficits also applied to the information support unit, since the editors had no adequate tool to help them structure the knowledge and to obtain an overview of the existing documents.

Union Investment decided to respond to these challenges by introducing a new content management system. It included a conversion tool which was based on newly created templates in office applications and could create HTML-content in compliance to a general layout style automatically (see Figure 2).
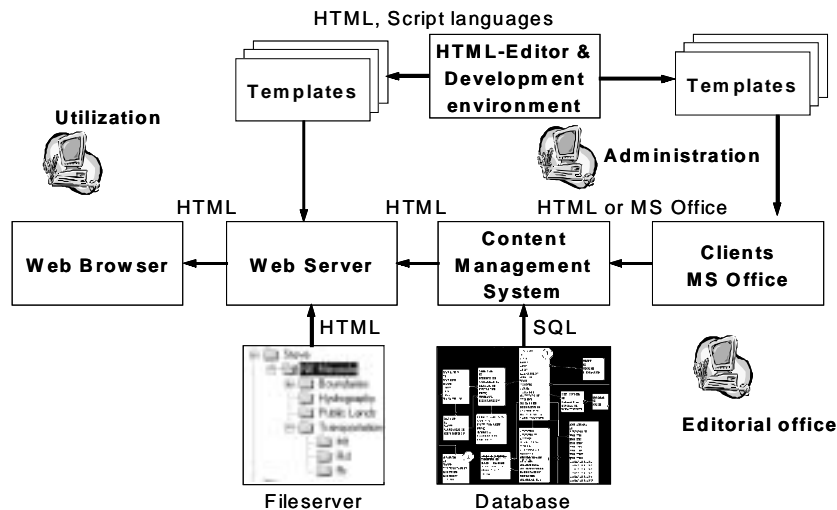

Figure 2: Content Management pattern at Union Investment

The new solution enabled the editors to publish new content directly from the office application as well as providing an overview of the existing documents. The content management system offered a search function to

support the CCC agents' work in addition to a redesigned consistent navigational structure.

Siemens Mobile – Using Customer Feedback for Product Innovation

The Siemens case study focuses on the use of knowledge from customers in Siemens' mobile communications business unit. Siemens wanted to use its huge base of inbound customer complaints and feedback for product enhancement and innovation.

Business Challenge

As a globally acting provider of mobile communication solutions, Siemens operates 90 local service organizations providing technical support and service management. Seven call centers worldwide receive a call volume of approximately 6 million per year as well an average of 400,000 emails and 70,000 written inquiries per year.

In the past, the local service organizations operated separately and were not connected. Although the complaint management process was partly supported by systems, the customer service contact was only conceived and optimized to answer complaints and service requests efficiently. No analysis was made of the high volume of incoming calls, mails and written inquiries in order to pursue product enhancement and innovation. There was also no central aggregation of complaints in the customer care domain, or a connection to the global product development department.

Knowledge-enabled Solution

The high competitive pressure in the mobile communications market, shorter product life cycles and the rising customer expectations regarding product functions and quality were the main business drivers for Siemens to connect its global customer care activities with the product development domain via KM instruments.

All customer requests, also those reaching the customer care center via phone or mail are now collected and stored in a central knowledge database at Siemens' headquarters, where the product development department is also located. From its central knowledge base, Siemens uses the incoming customer requests and suggestions in a threefold way. First, via the FAQ section on the customer care websites, direct contact with the end user is constantly optimized in order to enhance the degree and quality of self-service. Second, customer feedback is used to permanently update the quality of the customer care intranet portal's information that is used by the call center employees and at the stores where service personnel needs supportive information for direct customer contact. The third domain is the joint elaboration of customer feedback together with the product development department. The resulting changes in product configuration affect the current mobile phones through, e.g., software

updates that a large number of customers demand, but the user's desires regarding radical changes in product design are also evaluated for incorporation in the next product generation. The customer care department therefore also contacts single customers to ascertain their specific ideas and to involve them in further product development phases. Figure 3 illustrates the knowledge transfer process at Siemens.
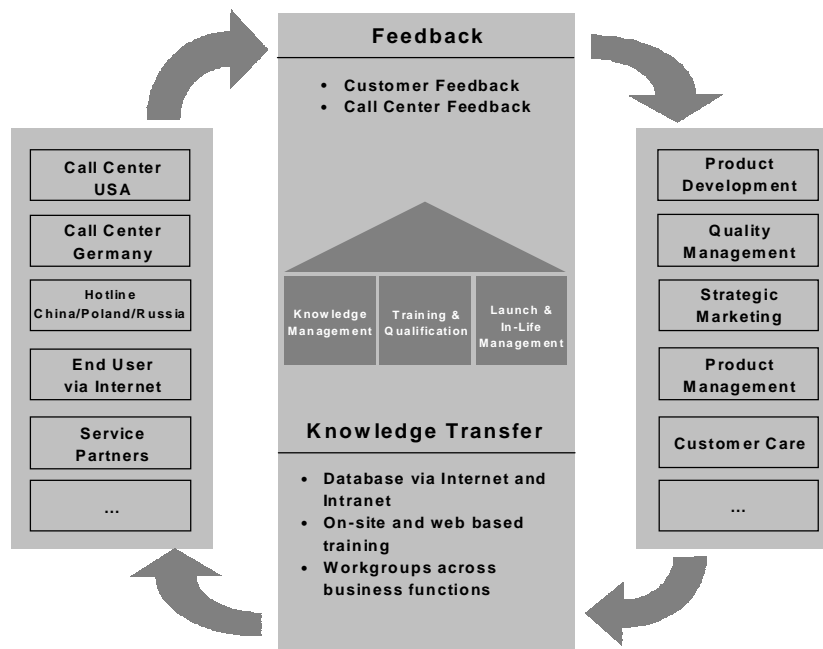

Figure 3: Customer-oriented knowledge transfer at Siemens

Credit Suisse – Gaining Customer Insights for Profitable campaigns

The Credit Suisse case describes how the financial services division of a large financial institution generated knowledge about their customers in order to optimize its customer profiling and segmentation, and campaign management processes.

Business Challenge

By the end of the 1990s, Credit Suisse used to launch their financial products' marketing campaigns broadly, without focusing on certain customer segments or target groups. On the completion of a specific campaign, evaluations of the campaign success were possible on an aggregate product level, but not in respect of customer groups.

To improve the effort required for their marketing campaigns success, the specific challenge was to identify those customers with a high profitability, i.e. a high "customer value". Then the goal was to target each product marketing campaign according to the specific needs of those "high-value" customer segments in order to improve the ratio of product sales associated with the campaign. Credit Suisse realized that they needed to acquire knowledge of their customer base's contact history as well as of the products they used in order to identify high profitability customer relationships.

Knowledge-enabled Solution
In 1999, Credit Suisse decided to introduce a data warehouse to organize the knowledge that the bank had gained about the product use of their customers over time. Credit Suisse thus mainly uses its customer knowledge for cross- and up-selling campaigns in high-value customer segments. If a product campaign is going to be launched, a target group in a "top segment" is selected and the likelihood of that segment buying certain core products (e.g. funds, life pensions etc.) is determined via data mining methods. With this information, customer groups are built according to product preferences and a product and communications strategy is defined for each group. Thereafter, a list of target customers is generated and handed over to the branch relationship managers who then contact their customers. Finally, feedback on the sales' success is provided to the marketing department in order to further enhance the segmentation model for future campaigns. Figure 4 depicts the data-based campaign management approach of Credit Suisse.

Besides being used to optimize marketing campaigns, Credit Suisse uses the knowledge gained about its customers' product use and contact history for churn management. If, during the lifetime of a client relationship, certain events occur, e.g. high savings outflows that indicate a high likelihood of attrition, the marketing department releases individual campaigns and contacts these clients directly in order to avoid the termination of the customer relationship.

A Cross-case Comparison of Performance Outcomes from Knowledge-enabled CRM

In conclusion, we observed that in each of the three cases, the support of CRM processes via the effective application of customer knowledge leads to significant performance improvements, either with regard to improved quality, shortened time efforts or even quantifiable cost savings.

At the CCC of Union Investment, the new structure and shortened timeliness of the information available on the knowledge platform are an important factor in supporting CCC agents' and editors' processes. It enables them to provide faster answers and of a higher quality. By saving time in the process, customers are eventually served faster. An individual
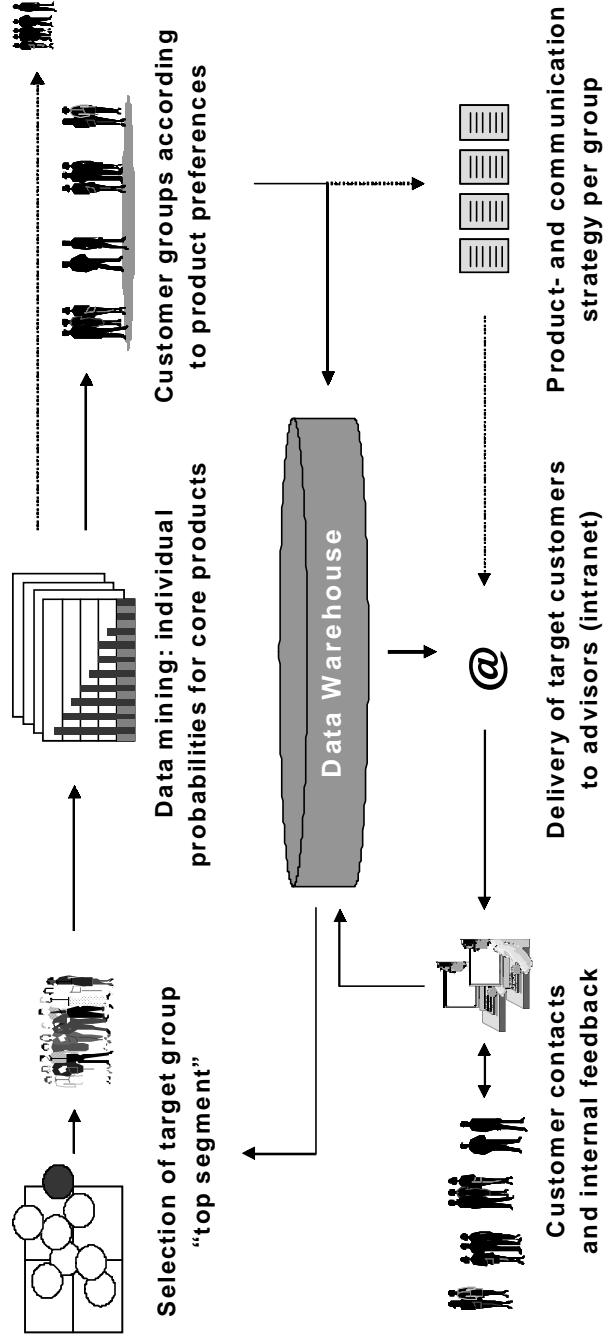
Figure 4: Data based campaign management at Credit Suisse

agent can also serve more customers, thereby increasing service levels and reducing waiting time. At Union's information support department, the cost and time needed to maintain the new platform were significantly reduced by eliminating most of the effort associated with the conversion of the existing content. Furthermore, the focus on just one information source made it easier for agents to find what they need and reduced the operational costs of publication for the editors.

At Siemens, the mobile phone division used the central customer complaint and feedback base to optimize the systematic collection of knowledge from customers about technological trends and therefore generated future-oriented know-how about customer needs for service and product innovation. This resulted in an optimized support of complaint management both for customer self-service on the website and for Siemens' employees at the call centers and local stores. The main outcome, however, was the conversion of in-depth customer feedback into new product features, both during the ongoing product cycle and when changing to another product generation. Examples include a flexible memory usage for customers and the access to the complete menu during a call. As an important side effect, Siemens observed that end users who complained and were then approached personally and seriously in order to evaluate their ideas for product innovation, turned into satisfied and loyal long-term customers.

Credit Suisse profited from analyzing the knowledge about their customers to launch marketing campaigns depending on their likelihood of success at targeting a certain customer group. The performance of single initiatives can be measured precisely, and, consequently, Credit Suisse only executes campaigns with an anticipated positive net present value (NPV). Furthermore, the bank also achieved considerable financial benefits on the cost side. Interviews revealed that the percentage of customers interested in purchasing a service, but who were rejected due to a bad credit rating, was reduced by almost half when compared to previous campaigns. The total project costs were therefore redeemed within two years.

Table 3 summarizes the major performance outcomes of the three cases under analysis.

Union Investment	Siemens	Credit Suisse
? Decrease in duration of service calls ? Higher quality of the provided service ? Higher customer satisfaction	? Optimized service quality and self-service ratio in customer care ? Introduction of customer-induced product enhancements and innovations	? Marketing campaigns with higher net present value ? Linking campaigns and individual credit rating reduces unintended product offerings

Table 3: Performance outcomes of knowledge-enabled CRM

Implications for Practice

Based on our findings, we present four implications of the successful improvement of CRM processes by CKM. These implications can be arranged in a conceptual framework for knowledge-based CRM along the categories of strategy, processes, systems, and change (see Figure 5).
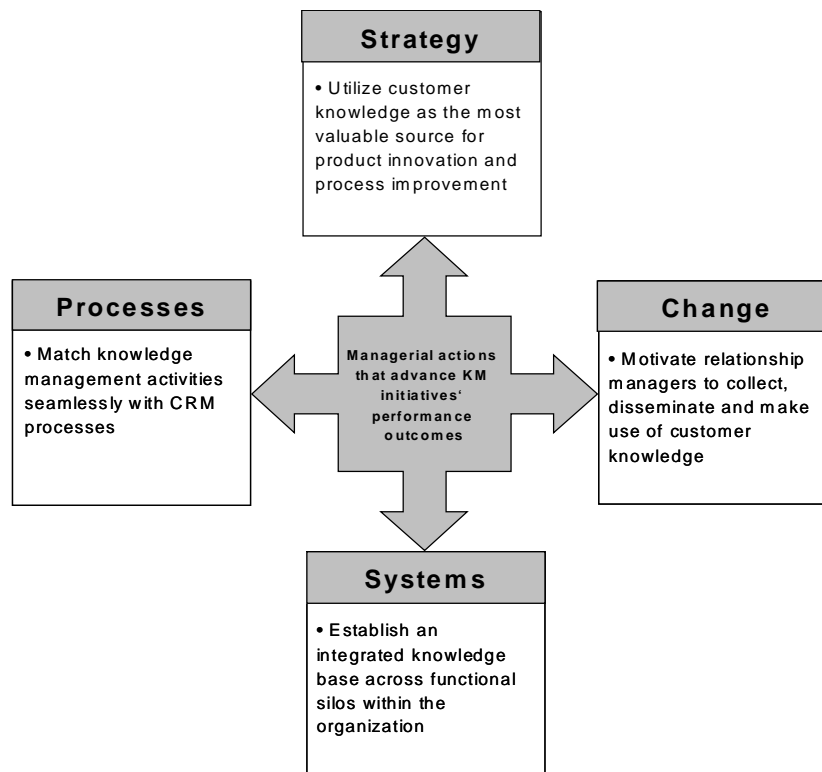
Strategy
- Utilize customer knowledge as the most valuable source for product innovation and process improvement

Processes
- Match knowledge management activities seamlessly with CRM processes

Managerial actions that advance KM initiatives' performance outcomes

Change
- Motivate relationship managers to collect, disseminate and make use of customer knowledge

Systems
- Establish an integrated knowledge base across functional silos within the organization

Figure 5: A managerial framework for knowledge-based CRM

This framework may serve as a guideline for practitioners and thereby help to alleviate the gap between the benefits that are known in theory and in successful practice cases on the one hand, and a still very low level of broad CRM process implementation that we identified in this study's survey, on the other hand. The elements of the proposed framework are outlined as follows:

Strategy – Utilize customer knowledge as the most valuable source for product innovation and process improvement. In order to harness the potential of CKM processes and their support by adequate systems use,

top management has to recognize their customers as a valuable source of knowledge rather than a burden. At Siemens Mobile, this perception formed the basis of an organizational connection between customer care and product development in order to access incoming customer ideas and suggestions for product innovation and service improvement.

Processes – Match KM activities seamlessly with CRM processes. As the Union Investment case showed, CRM processes are best enabled by customer knowledge if the supportive KM processes are lean and tightly integrated into a relationship manager's actual work. At Union Investment, the effort to support the customer contact center with relevant knowledge could be reduced significantly. The issue of KM as a separate task thus loses prominence. Various authors, like Davenport and Glaser, support this view by arguing that the best way of managing knowledge effectively is to integrate it "invisibly" into the actual core processes (Davenport and Glaser, 2002).

Systems – Establish an integrated knowledge base across functional silos within the organization. An integrated view of the relevant customer data as well as an integration of the relevant systems has been a critical success factor in all the three cases we described. As the Siemens case showed, a centralized knowledge repository helped to overcome both regional boundaries and separations between business units. The data warehouse was also an imperative prerequisite for Credit Suisse to establish criteria for the evaluation of customer value and marketing campaigns across several product groups.

Change Management – Motivate relationship managers to collect, disseminate and make use of customer knowledge. Besides perceiving the customer as a valuable source of knowledge, top management is also challenged to encourage an organizational culture in which employees are willing and motivated to share their own knowledge *for*, *from* and *about* customers with others and to make use of knowledge provided by others. Credit Suisse realized that in order to foster the willingness of their relationship managers to provide the bank with customer knowledge, they had to receive knowledge from the organization as a first step. Thereby, support such as providing hints on how to effectively approach a targeted customer group helped to build confidence in the initiative as a whole.

Conclusion and Future Research Directions

As a result of our research effort, we established a managerial framework for knowledge-based CRM. The proposed framework enables practitioners to successfully utilize knowledge *for, from* and *about* customers in order to achieve superior performance of CKM initiatives. The proposed managerial framework needs follow-up research and has to be further tested by means of qualitative and quantitative data, particularly to ensure the generalizability of the framework. We will also pursue the opportunity to undertake longitudinal studies with the same organizations in order to

discover if the findings hold true over time. This should also lead to a refinement of the proposed framework, leading us from a macro to a micro level.

During our research process we also encountered the problem that to date there is no generally accepted performance measurement system for CKM initiatives. This makes comparisons between different initiatives difficult as well as arbitrary to a certain degree. Future research directed towards this aspect may allow researchers to overcome this biased perspective, thus leading to new insights and the discovery of new interrelations.

Another future research direction that has been identified by the authors lies in further conceptualizing and evaluating the concept of a 'closed knowledge loop' within CRM processes. We presented three case studies to illustrate 'good practices' in each of the three knowledge flows (i.e. knowledge *for, from* and *about* customers). In order to unleash the full potential of customer knowledge we argue that firms must excel at managing all three knowledge flows simultaneously. Future research in this direction should establish further evidence on how the joint orchestration of all three described knowledge flows creates superior customer-relating capability.

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