Customer Relationship Management Processes in Retail Banking – Best Practice and Business Value Evaluation

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Abstract

A competitive implementation of customer relationship management (CRM) in retail banking requires business processes aligned to the value contribution. The objective of this paper is to derive a reference process on macro-level from industry best practice and validate its applicability in a survey. Furthermore, we introduce a new method for evaluating existing business process implementations with respect to the business value, as measured by the value of the customer base as relevant overall key performance measure. Comparing the individual company process and the reference process, in-house and external experts can evaluate the gaps by using the decision calculus method. This allows a clear recommendation on the prioritization of potential process modifications and quantifies their effect in terms of business value.

1. Introduction

The past decade has seen rapid and substantive changes in the way the customer relationship is dealt with. Customer Relationship Management (CRM) is widely in use nowadays, but the implementation and understanding of specific business processes differs significantly in the financial services industry [1] and there is no set of best practice (reference) processes publicly available. Moreover, the question for Return on Investments (ROI) of any IS project undertaken is being asked permanently [2]. Hence, business processes have to be designed and implemented to contribute to the companies’ success in the long run.

To assess existing business process implementations and to identify areas of improvement, a reference process can serve as a benchmark [3]. Differences between the current CRM processes and this reference process are to be analyzed with respect to the efficiency of monetary investments into process modifications. Taking the increased relevance of value based customer management into consideration [4], the metric for processes’ business value should be customer related and linked to the value of the customer base. We therefore apply the customer lifetime value (CLV) and customer equity, being the focal construct of customer management on firm level [5].

The evaluation of customer relationship management implementations leads to two substantial problems: developing a suitable reference process for retail banks as well as estimating the impact of process modifications on business value measures to give recommendations for CRM investments.

Thus, the objective of this paper is to develop such a reference process for retail banking by extracting it from industry best practice and validating it in an empirical study (qualitative and quantitative). Furthermore, we propose a method to identify primary areas for process improvements using in-house managerial knowledge and expectations.

The remainder of the article is organized as follows: Section 2 recalls the previous research on CRM business processes in retail banking and the methods for evaluation of process modifications. In section 3, we derive our CRM reference process from industry best practice and validate in section 4. Based on these findings, we introduce a new method for evaluation of process modification in section 5. The last section closes with a brief discussion and the related limitations and research opportunities.
2. Previous Research

2.1. CRM Processes in Retail Banking

A business process is widely defined as a structured flow of activities supporting business goals [6]. Reference modelling gained relevance for improving business processes to a “best practice” status and reusing optimal reference process modules [7].

While there are precise reference processes for diverse business processes, detailed customer management processes especially for retail banks cannot be found in the literature yet. Industry-specific standard software (core banking software and related products) focus on the transaction aspects, whereas industry-independent CRM solutions may be adapted to the banking context (as e.g. Siebel CRM with Siebel eFinance) and implemented using rather proprietary, ARIS-based reference processes [8].

There are some processes published, mostly aligned to a generic customer life cycle, but those are not sufficiently detailed to serve for operative implementation or as a benchmark for process analysis [4], [9]–[14].

Although the importance of an industry-specific CRM reference is constantly reported [15], there is no such reference process.

2.2. Business Process Evaluation

As investments in the modification of business processes can be analyzed as any other IT investment, there is extensive research on ex-ante-evaluation of such investments which can be drawn on [16]. Some authors link the effects on business processes to an ROI estimation of the investment [17], [18], suggesting that IT’s value contribution should be measured at the level of business processes, where the actual generation of value takes place.

Measurement and optimization of business processes is dealt with especially in the field of operations research for a certain time, but still most of the attempts are manual, i.e. not involving a formal automated methodology [19]. [20] give an overview of business process analysis techniques and tools, focussing on detailed processes facilitating in-depth modelling and usage of simulation or mathematical models.

This approach of process analysis does not do without a reference process, but also requires a certain method of estimating the effects of changes in the CRM process. [21] establish a scorecard framework to capture the effects of CRM process modifications, combining qualitative and quantitative measures, suggesting benchmark partnering to get a reference for comparison. The evaluation of process modifications is limited to a scenario technique and they do not provide a single monetary measure to serve as a basis for decisions.

To provide such decision support, an appropriate forecast of certain effects is necessary. To achieve this, model builders combine simple models with managerial intuition, resulting in a response function [22]. If we want a manager to use such a model, we should develop a model that is (i) simple, (ii) robust, (iii) easy to control, (iv) adaptive, (v) complete on important issues, and (vi) easy to communicate with. One method that aims to fulfill those criteria is the decision calculus method [23], that facilitates the subjective estimation of such a response function. The decision calculus method is a model-based set of procedures for processing data and judgments to assist a manager in his/her decision making. This method was therefore applied in the field of IT investments [24], although this approach is limited on infrastructure and IT systems decisions, also leaving out the process perspective.

The research reviewed above has provided insights into single aspects of the problem, but there is neither a customer management reference process for retail banks nor an approach compiling this knowledge and providing a systematic way to evaluate customer management processes with respect to an aggregated success measure.

3. Reference Process Development

Reference processes as well as other reference models are considered as “generic conceptual models that formalize state-of-the-art or best practice knowledge” [25] in a certain application domain. A common way of development is the derivation from company specific situational models which results in various problems. In particular, such processes or models, originating from singular projects, comprise specific situational information and thereby can contradict with the intended universality [25]. By developing a reference process from scratch using rigorous methods, involving different sources of industry knowledge and a survey for validation, we try to mitigate those inherent problems.

As a research method for the development of a CRM reference process, we apply the constructive approach [26] which aims at solving the identified business problem by means of constructing a suitable model, ensuring the applicability and demonstrating the novelty and actual working of the solution.

Based on a paradigm such as the constructive approach, several construction methods for reference
processes exist [27]. We apply the approach developed by Schuette [28] as it qualifies for the existing task due to its total neutrality regarding modelling language as well as application area. Schuette’s procedure consists of five steps:

1) problem definition
2) construction of reference model framework
3) reference model structure
4) completion
5) application

As a starting point for the top down modelling, in step 1 the problem definition is formulated, to facilitate the iterative modelling. The reference process should serve as an “area model”, relating only to the field of customer relationship management within the company and should be specifically adjusted to retail banking business, but generic enough to cover different business models (e.g. direct brokerage as well as brick-and-mortar branches).

The construction of the reference model framework in step 2 is conducted taking the already published reference models into consideration. Existing reference processes (e.g. [13]) propose the customer life cycle as a framework for the process structure. Therefore, as an essence of the existing processes, 10 relevant core processes grouped along the customer life cycle are identified.

The construction of the reference model structure itself in step 3 starts with the determination of the degree of abstraction, which is set to a rather high one, keeping the process model flexible and generic enough to cover specific business models without getting to arbitrary. Analogies in process structure were identified and constructed to ensure a unified and simplified structure on sub process level, each consisting of three process stages: strategy/planning, process execution and process controlling.

The construction itself took place in 21 full-day workshops with industry experts from a consulting company (senior/managing consultant and partner level) and was validated in qualitative interviews and a quantitative survey. This led to a breakdown of the 10 core processes into 94 sub processes; i.e. 7–11 sub processes per core process (see Figure 1, notation based on standard elements of Business Process Modelling Notation (BPMN) [29]).

The process completion in step 4 aims at identifying interconnections in the reference model and enhancing it by quantitative measurements to support the implementation of a reference process, facilitate benchmarking and identifying best practice implementations. Typical process key performance indicators (e.g. throughput times) were added to the process descriptions.

The application as step 5 could not be fully integrated in the design of the reference process in this case, but by validating the reference process in the field, we can re-fine and enrich the process in a similar way to a feedback loop from practical application.

4. Validation of CRM Process

4.1. Qualitative Validation: Interviews with Managers

We validated the extracted best practice process in 3 half-day discussion rounds with managers of different banks in February and March 2006: two nationwide acting retail banks (among Top10 of retail banks in Germany) and a smaller subsidiary of a foreign retail bank with a focus on retail brokerage. All bank managers were either from marketing department (director level, vice president) or CRM (vice president level) and neither had any contact to the consultants involved beforehand, nor had their departments been. Using the problem-centered interview (PCI) [30] with some routing questions as data collection method one-by-one, they described their own CRM process set in detail to one or two researchers and evaluated the draft version of the proposed CRM reference process (on an abstract level as well as compared to their own processes). Main criteria were completeness, industry fit and implementability.

The input was used to refine the process model and especially lead to modifications in the Channel Assignment process, as the managerial feedback highlighted various difficulties in practical implementation of the process.

4.1.1. Quantitative Validation: Survey. An empirical study among retail banks in German-speaking countries has been conducted in order to determine the fit of the whole reference process and the relevance and importance of the developed sub-processes for the bank’s business models. All CRM processes are evaluated individually regarding their implementation status.

The survey was conducted using a written questionnaire, distributed online as well as paper based in April-June 2006. The questionnaire was sent out to the 430 largest retail banks selling to German speaking customers. 68 responding banks lead to a response rate of 18%, which consisted of 53 banks from Germany, 7 each from Swiss and Austria and 1 bank from South Tyrol/Italy (with German as language of business).
### Table 1. Customer Relationship Management core processes in retail banking

<table>
<thead>
<tr>
<th>No.</th>
<th>Process name</th>
<th>Process description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Market / Potential Analysis</td>
<td>Analysis of key market trends and potential target customer groups</td>
</tr>
<tr>
<td>2</td>
<td>Contact Management</td>
<td>Registration, structuring and analysis of all customer interaction events</td>
</tr>
<tr>
<td>3</td>
<td>Individual Sales</td>
<td>Sales and offerings submitted individually by an agent</td>
</tr>
<tr>
<td>4</td>
<td>Channel Assignment</td>
<td>Migration of customers to a channel fitting to their specific needs and the bank’s profitability requirements</td>
</tr>
<tr>
<td>5</td>
<td>Sales Prospects Management</td>
<td>Identification/handling of prospects and leads as well as distribution to sales and campaign management</td>
</tr>
<tr>
<td>6</td>
<td>Campaign Management</td>
<td>Planning, development, conduction and analysis of marketing campaigns</td>
</tr>
<tr>
<td>7</td>
<td>Customer Analytics</td>
<td>Evaluation of customers as basis for strategic segmentation and controlling</td>
</tr>
<tr>
<td>8</td>
<td>Loyalty Management</td>
<td>Establishment of a permanent customer relationship by continuous dialog to increase retention rate and share of wallet</td>
</tr>
<tr>
<td>9</td>
<td>Customer Service</td>
<td>Non-sales contacts, initiated by the customer (especially support requests)</td>
</tr>
<tr>
<td>10</td>
<td>Feedback Management</td>
<td>Registration, handling and analysis of positive customer feedback and complaints</td>
</tr>
</tbody>
</table>

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**Figure 1. Example of detailed core process: Channel Assignment**
The distribution of responses amongst the banking groups (22% private banks, 31% savings bank, 25% cooperative banks, and 22% other banks) matches the distribution in the sample, as does the size of the banks.

The results (see Table 2) show that the developed reference process was evaluated as appropriate by 89% of the banks. To test on the practical relevance, the implementation status was checked as well and 65% of the banks have already implemented comparable processes. The implementation status of single sub processes shows that standard functions critical for a retail bank’s business model like Individual Sales or Customer Service are perceived and organized as a business process and implemented (each 80% respectively 86%). Campaign Management does exist as a process in the majority of banks as well with 76%.

Processes like Customer Analytics, Sales Prospects Management are being implemented at the moment. Loyalty Management is the most-cited process which was not considered to be implemented.

Although the sub-samples for each banking group are fairly small, we cannot detect large differences for most core processes. Merely the implementation status for Sales Prospect Management and Feedback Management show more obvious variances for the savings banks. In the first case, the implementation status is far behind the other banking groups (with only 14% existing), and in the other case the implementation status is significantly higher (with already 81% existing).

This might reflect anecdotal evidence, that savings banks still feel more obliged to their customers’ welfare (expressed by implemented feedback management processes) and less growth-oriented (expressed by lacking implementation of Sales Prospect Management). Although the situation might be similar for cooperative banks, we do not find equivalent deviations in the implementation status for them, always taking the small sample sizes into consideration.

In summary, the relevance and the fit of the whole reference process can be confirmed. The relevance of most sub processes is being approved by their implementation status, although this varies among the business processes and not all processes considered relevant already exist within the company.

5. Process Assessment for Business Value Evaluation

Using the essence of existing processes in analytical and operational customer relationship management, we set up an initial reference process model and detail it. The existing CRM process is assessed by comparing to this reference process. The effect of changing the bank’s CRM on the customer value related metrics is estimated using decision calculus method, as it is the only appropriate method for the derivation of whole reaction functions on a subjective basis. Performance criterion and key metric is the customer equity, which serves as an aggregated measure for the value of the customer base, consisting of five core customer metrics: number of customers, retention rate, retention expenditures, acquisition expenditures, cash flow. ROI calculation is performed to evaluate the return on the monetary investment.

To analyze an existing business process with respect to the constructed reference process, an assessment procedure is necessary, the so-called process assessment. In the following, elements from ISO 15504 approach Software Process Improvement and Capability Determination (SPICE) are used, which focuses on the self-evaluation of internal processes as a basis for process improvements [31]. The specific process will be evaluated by this process assessment and the capability level is determined to identify starting points for improvements as well as potential risks. The evaluation with SPICE is conducted by nine process attributes, representing certain rateable characteristics. The capability of each attribute is scored on a four-point-scale (complete/widely/partly/non complete). To simplify the process assessment in the following, a process attribute characteristic will be used, taking the management dimensions organisation, technology and processes into consideration.

In contrast to SPICE, a five-point-scale for capability levels will be used, with given precise indicators for the values 1 (basic), 3 (advanced) and 5 (excellent). This leaves a discretionary decision space for the expert, which can mitigate decision problems, especially when deciding on one single process capability level with respect to the three management dimensions.

5.1. Impact on Customer Equity as Key Measure for Business Value

By using the decision calculus method and the expert’s knowledge, reaction functions are estimated on a subjective basis for each customer-related success measure. Yet a single measure is required to serve as a basis for decision-making. In the case of value-based customer management, the Customer Equity is regarded as such a focal construct [32]. Therefore the effect on Customer Equity as a target variable is calculated.

Customer Equity can be seen as the total of the discounted customer lifetime values summed over all
Table 2. Implementation status of Customer Relationship Management core processes in retail banking

<table>
<thead>
<tr>
<th>Process</th>
<th>Already existing</th>
<th>Being implemented</th>
<th>Not considered for implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market / Potential Analysis</td>
<td>67.3%</td>
<td>32.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Contact Management</td>
<td>60.0%</td>
<td>32.7%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Individual Sales</td>
<td>80.0%</td>
<td>7.3%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Channel Assignment</td>
<td>46.3%</td>
<td>42.6%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Sales Prospect Management</td>
<td>43.6%</td>
<td>43.6%</td>
<td>12.7%</td>
</tr>
<tr>
<td>Campaign Management</td>
<td>75.9%</td>
<td>20.4%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Customer Analytics</td>
<td>54.5%</td>
<td>45.5%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Loyalty Management</td>
<td>36.4%</td>
<td>43.6%</td>
<td>20.0%</td>
</tr>
<tr>
<td>Customer Service</td>
<td>85.5%</td>
<td>12.7%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Feedback Management</td>
<td>61.8%</td>
<td>34.5%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

current and future customers, whereas the lifetime values can be calculated using the other success measures and a given discount rate [33], [34]:

\[
CE = N_{current} \left( (ccf - cr) \cdot \frac{1 + k}{1 + k - r} \right) + N_{future} \left( (ccf - cr) \cdot \frac{1 + k}{1 + k - ca} \right) \cdot (1 + k)
\]

with:
- \( CE \): customer equity
- \( ccf \): customer cash flow,
- \( N_{current} \): number of customers (in current period),
- \( N_{future} \): number of customers (new customers per period),
- \( cr \): expenditures for customer retention,
- \( ca \): expenditures for customer acquisition,
- \( k \): discount rate,
- \( r \): retention rate.

In case of a simpler problem, a direct estimation of those effects would be feasible, but in a rather complex situation with ten core processes and five success measures, a direct estimation is hardly feasible. Since the derivation of a reaction function from objective data is not possible due to data unavailability, the estimation of a whole reaction function on a subjective basis works as an alternative, which is established in parts of management science [35]. Subjective estimation is based on the aspect, that decision makers do a prediction of effects in each single decision, which is to be explicated using the decision calculus method [23].

As a functional form, Little’s \( ADBUDG \) function [23] will be proposed, which was originally developed for advertising budgeting decisions. The model assumes that there is a fixed upper limit of response to a maximum input (saturation), and it also assumes that there is a fixed lower limit to response under no input. Within this range, increases in input increase response, and reductions lead to a decay in response. The model is regarded as highly flexible on the one hand and can be estimated with very few values on the other hand [36]. Therefore, it is appropriate for the estimation of reaction functions in the existing problem.

\[
Y = b + (a - b) \frac{X^c}{d + X^c}
\]

with:
- \( Y \): success measure (number of customers; customer retention; customer cash flow; acquisition expenditures; retention expenditures),
- \( X \): process capability level,
- \( a, b, c, d \): parameter.

Depending on the value of parameter \( c \), the function assumes a concave \((0 > c > 1)\) or s-shaped \((c < 1)\) form. This easy adjustment of the shape by altering one parameter results in a high flexibility and furthermore an easy understandability and a high degree of esteem.
The manager can determine the lower limit of the function by parameter \( b \) as a minimum effect and the upper limit by parameter \( a \) as a maximum effect. The reaction on the actual input value \( (X_{\text{act}}) \) and a 50% increased input value \( (X_{\text{inc}}) \) determines the two missing parameters:

\[
c = \frac{\ln \left( \frac{1 - e_{\text{inc}}}{1 - e_{\text{act}}} \right)}{\ln \left( \frac{X_{\text{act}}}{X_{\text{inc}}} \right)} \quad (3)
\]

\[
d = \frac{(1 - e_{\text{act}}) \cdot (X_{\text{act}})^c}{e_{\text{act}}} \quad (4)
\]

The Parameters \( e_{\text{act}} \) and \( e_{\text{inc}} \) enable the calculation with a less complex formula; they are not to be interpreted regarding to content:

\[
e_{\text{act}} = \frac{Y_{\text{act}} - a}{b - a} \quad (5)
\]

\[
e_{\text{inc}} = \frac{Y_{\text{inc}} - a}{b - a} \quad (6)
\]

Analogous to Lodish’s implementation of the Decision Calculus Method in the CALLPLAN model [37] managers have to answer five questions:

1. Actual process capability level and success measures \( (X_{\text{act}}, Y \text{ at } X_{\text{act}}) \)
2. Success measures at minimum process capability level \( (Y \text{ at } X = 1) \)
3. Success measures at a process capability level increased by 1 \( (Y \text{ at } X = X_{\text{act}} + 1) \)
4. Success measures at a process capability level decreased by 1 \( (Y \text{ at } X = X_{\text{act}} - 1) \)
5. Success measures at maximum process capability level \( (Y \text{ at } X = 5) \)

This information enables the estimation of one function (defined up to the value of \( X_{\text{act}} \)) using questions (1)–(3) and (5) as well as a second function (defined from the value of \( X_{\text{act}} \)) using questions (1) and (3)–(5). This leads to a higher prediction quality in the end.

Advantageous in the usage of decision calculus approach is especially the high usability and therefore user acceptance [38] which is a result of simplicity, robustness and flexibility. This procedure avoids a calculation, which is only based on hard facts, but also integrates qualitative factors within the managers’ expertise. Problems might occur when a causal relation between those variables is assumed. Therefore a potential interdependency between factors are to be checked in a systematic way when applying the method to prevent misleading estimates resulting in an incorrect reaction function. Subjectivity of data input mitigates several problems, but can also result in manipulative behavior.

To further reduce the managers’ effort, a reduction of values to be estimated is reached by estimating only success measures which are typically relevant for the core processes and are part of a causal relationship. The approach itself combining process assessment and calculation of effects by usage of the decision calculus method and the reaction function is implemented as a standalone application using Microsoft’s .NET framework (see Figure 2).

Taking cost estimations for potential activities into consideration, an (customer equity based) ROI for these activities can be calculated and compared. Figure 3 shows an illustrative example of the five process capability levels of a certain process leading to different values of the customer equity.

6. Discussion / Limitation and Opportunities

The necessity for customer relationship management processes in retail banking and their evaluation is discussed in theory as well in practice. By developing a reference process from consultants’ and managers’ industry expertise, we provide a generic CRM process and furthermore, propose a systematic approach for the evaluation of the business value. Managers’ expertise is used in a decision calculus procedure to estimate a reaction function for the key metrics, which are aggregated afterwards to customer equity as the ultimate business value metric for this process. This approach as a software application can be used to support the modification of CRM processes as well as any other business processes provided the existence
or development of a suitable reference process.

The study is limited so far, as it was empirically validated only in a German setting – as we know from previous research (e.g. [39]), regional and cultural disparity may induce certain adaptations of the business process when using in a different cultural setting. Due to availability, we could not include proprietary reference processes included in the few CRM standard software solutions, although this could be of certain interest. The application of the proposed evaluation method opens up interesting avenues for future research regarding the scope of applicability and the potential transfer of the solution to other application domains. Due to the Decision Calculus method used in the approach, it requires experts’ judgments, which are too resource intensive to collect for business processes on micro level in many cases. However, there are other methods for such settings established or evolving (e.g. business process simulation [40]).

The study contributes to the existing research twofold: At first, we provide a reference process for customer relationship management in the application domain of retail banking, which is empirically validated in a qualitative and quantitative manner.

Second, we propose an alternative method to evaluate business process implementations from the business value point of view, allowing to align the process to the value created. In the application domain of customer relationship management processes, we have the customer equity as its business value metric.

Further research may advance from here and combine the customer equity estimation with traditional metrics for business value evaluation to create a holistic evaluation of business process modifications.

The study is also of high relevance for industry practitioners as it supports the triage of potential business process modification projects by the proposed evaluation method. This may result in an improved allocation of firm resources and increase long-term profitability.
References


