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- > Ist der ideale IT-Manager unsichtbar?
- > IT Management in Banks – The Role of Alignment and Usage
- > Linking Customer Metrics to Shareholder Value
- > Multi-Dimensional Approach to Sourcing Offerings





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# Linking Customer Metrics to Shareholder Value

**FIVE CUSTOMER METRICS ARE KEY CUSTOMER PERFORMANCE INDICATORS FOR FINANCIAL INSTITUTIONS. THEY DETERMINE THE VALUE OF THE CUSTOMER BASE AND OUR MODEL ALLOWS TO DETERMINE THE EFFECT OF CHANGES IN THOSE METRICS ON SHAREHOLDER VALUE**

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## Introduction

For decades, financial institutions have pursued strategies which are product and transaction oriented. Hence, they focused on the profitability of an individual transaction with a customer, rather than the profitability of a long-lasting customer relationship. Recently, financial institutions are becoming aware of the value of a customer relationship and customers are frequently considered as assets.

Financial institutions are now trying to derive clear benefits from operationalizing this customer orientation. Customer management has emerged as the practice which aims to implement and to profit from a customer orientation philosophy. Customer management deals therefore with the acquisition and retention of customers with the aim to increase the customer lifetime value and customer equity, an aggregate measure of the lifetime value of current and potential customers.

Hence, it is important to analyze the longterm impact of changes in customer metrics on customer lifetime value, customer equity, and shareholder value rather than the shortterm impact on profitability. Therefore, managers of financial institutions are well advised:

- to show how their marketing or IT activities affect customer metrics and, therefore, the value of a customer and
- to illustrate how changes in customer metrics affect customer and shareholder value.

The current state of knowledge raises the following questions:

- How to link customer metrics to shareholder value?
- What is the long-term impact of changes in customer metrics on customer base value and shareholder value?

The aim of this project was to answer these questions. We developed a model for financial institutions that links customer metrics to

shareholder value, tested the feasibility, and analyzed the key customer performance indicators. Our model allows to predict a firm's shareholder value and to evaluate the effect of changes in customer metrics on shareholder value. Our results show that the model is readily applicable to other firms with contractual relationships. The use of the model can form a sound foundation for valuing marketing and IT investments in terms of shareholder value.

## Linkage between Customer Metrics and Shareholder Value

In our model, we categorize the relationships between customers and financial institutions as "lost-for-good" relationships. This means that the customer is either totally committed

to the firm or totally lost. Contractual relations allow to rather easily determine the number of customers and the average cash flow per customer.

Our model builds upon the idea that all operating cash flows are generated by customers. That means that all tangible assets (e.g., equipment, buildings) as well as intangible assets (e.g., brands, knowledge, patents) support the generation of these customer cash flows. Thus, values of patents or brands are not explicitly modelled, but are reflected in customer cash flows. The sum of the present value of all customers' cash flows which is the sum of all customer lifetime values lead to Customer Equity as the measure for the firm's operating assets.

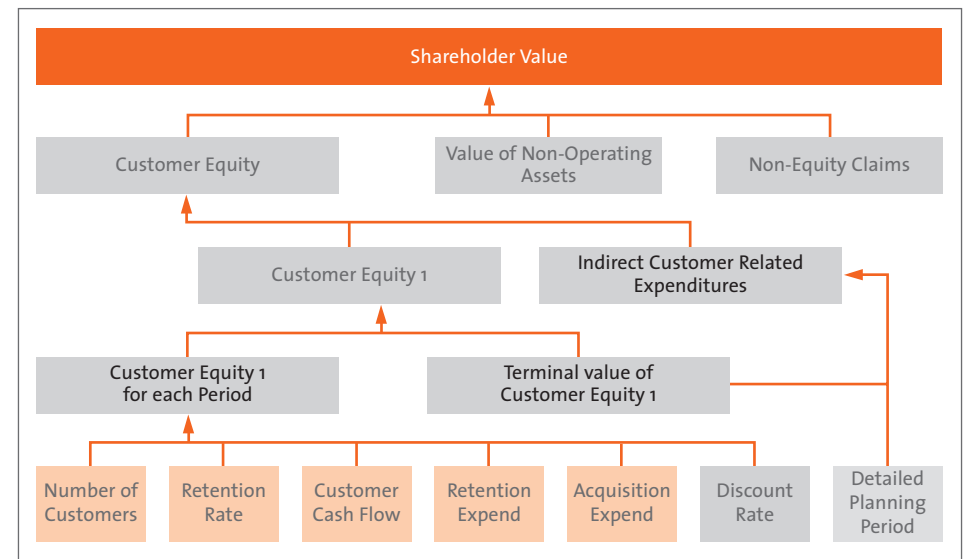


Figure 1: Linking Customer Metrics to Shareholder Value

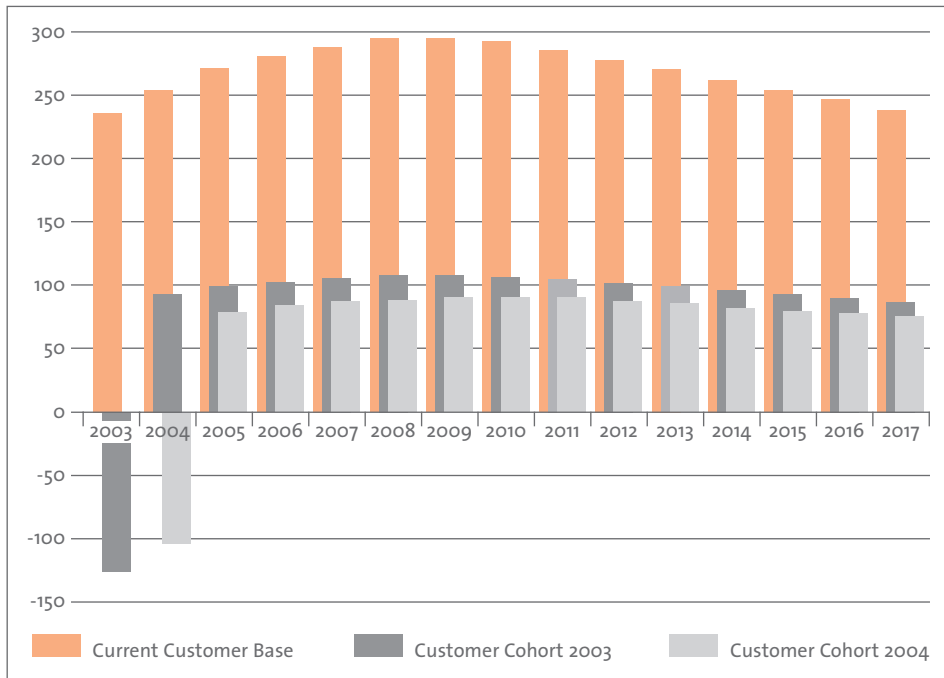


Figure 2: Value Contribution of Customer Cohorts

Figure 1 visualizes the structure of our model. In contrast to the shareholder value network proposed by Rappaport (1986) that summarizes all cash flows according to the period in which they occur, we summarize all firm's operating cash flows according to customer cohorts (i.e., customers acquired in the same period). Customer Equity 1 – divided into Customer Equity 1 for each of the detailed planning periods and a terminal value of Customer Equity 1 for thereafter – captures the present value of cash flows of those cohorts. The present values of cash flows of those cohorts are calculated by using customer metrics such as

customer cash flow, retention rate, and retention expenditures in combination with an adequate discount rate. Subtracting the present value of the indirect customer related expenditures (such as taxes and investments) leads to Customer Equity 2. Like traditional valuation approaches, shareholder value is determined by the value of the operating assets (Customer Equity 2) plus the value of the non-operating assets minus the non-equity claims (such as debt).

Figure 2 further clarifies the idea of the different customer cohorts and their value contri-

bution over time. The “Current Customer Base” has positive but declining value contributions over time. Because of the acquisition expenditures, customers acquired in 2003 (“Customer Cohort 2003”) have a negative value contribution in their first year but positive contributions in the subsequent years. Customers acquired in 2004 (“Customer Cohort 2004”) follow a pattern similar to that of Cohort 2003, except that it is shifted in time by one year.

#### Empirical and Analytical Study

In order to evaluate the feasibility of our model, we applied it to estimate the shareholder value of three financial institutions. Thereby, the objectives of the studies were:

- to test whether the current approaches in the marketing literature lead to a substantial overestimation of shareholder value,
- to compare the structure of shareholder value of different firms in the same industry,

- to analyze the impact of changes in customer metrics on shareholder value empirically and analytically.

The results indicate that our model can link customer metrics to shareholder value and is feasible even in cases where only limited information about the financial institutions is available. Additionally, we show that the current approaches in literature lead to a substantial overestimation of shareholder value.

Our findings show that five customer metrics (bottom boxes in Figure 1) are key customer performance indicators for financial institutions and have a significant impact on shareholder value. For example, changes in customer retention increase shareholder value more than four times more than changes in the discount rate (see Figure 3).

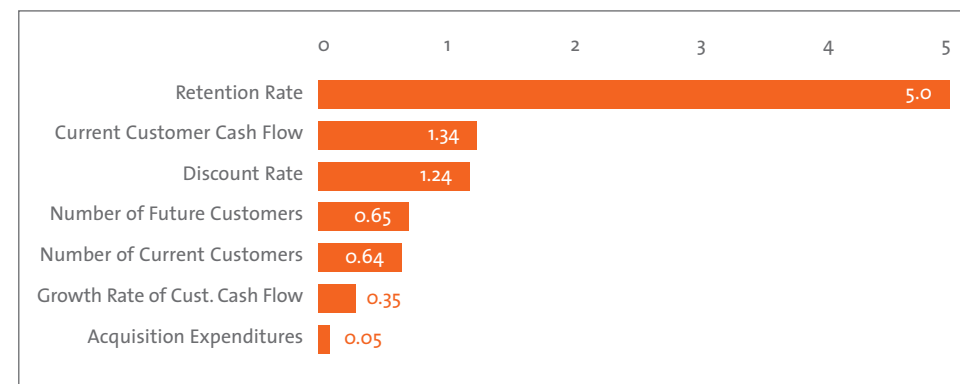


Figure 3: Percentage Impact of a 1% Change in Customer Metrics

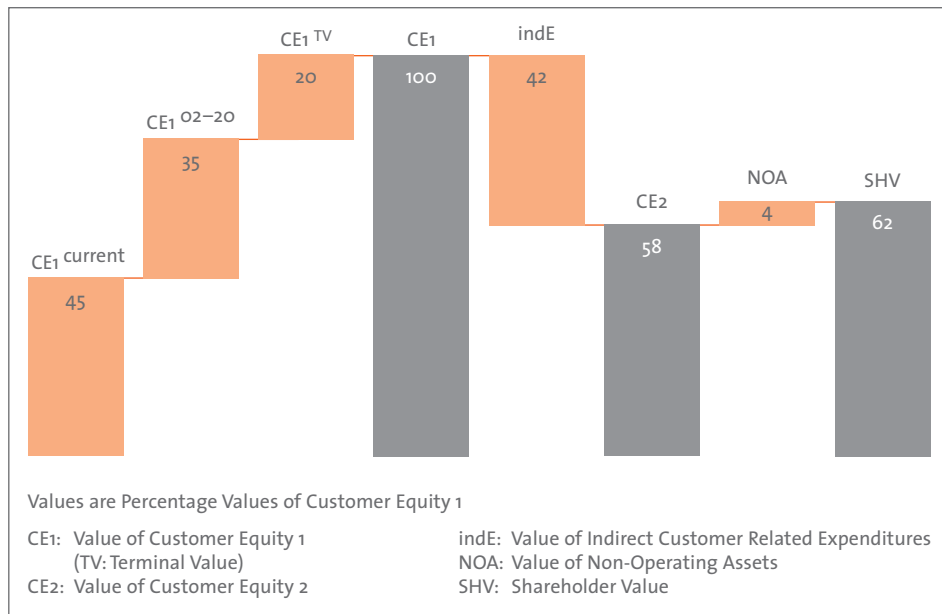


Figure 4: Average Structure of Shareholder Value

We propose a new metric, namely the ratio of customer equity to shareholder value, that allows to identify firms for which changes in customer metrics have a particularly great impact on shareholder value.

We also examined whether the high impact of the retention rate also holds true in situations with different values of customer metrics. In doing so, we developed a slightly simpler model than the one we used in the empirical studies and derive analytical solutions for the impact of all customer metrics on shareholder value. Our results indicate that the size of the retention rate is of central importance for financial institutions.

Especially for firms with already high retention rates (like financial institutions), increasing customer retention has an enormous impact on value but might be very costly as well.

Furthermore, comparing the structure of shareholder value (see Figure 4) visualizes the importance of the current customer base ( $CE_{1, \text{current}}$ ) relative to future customers ( $CE_{1, 02-20}$  and  $CE_{1, \text{TV}}$ ). Our findings demonstrate that the structure of shareholder value differs over firms but the importance of future customers is generally rather high. A comparison with market capitalization reveals the market expectations in terms of future customer growth.

### Summary and Conclusion

We developed a model that links customer metrics to shareholder value. This model allows to predict a firm's shareholder value and to evaluate the effect of changes in customer metrics on shareholder value.

Our empirical research shows that five customer metrics (number of customers, cash flow per customer, retention rate, acquisition expenditures, and retention expenditures) have a significant impact on shareholder value and, hence, are key customer performance indicators for financial institutions. For example, changes in customer retention increase shareholder value more than four times more than changes in the discount rate. This impact is even stronger for firms with already high retention rates.

Our results show that the current approaches in the marketing literature lead to a substantial overestimation of shareholder value. Furthermore, comparing the structure of shareholder value emphasizes the importance of the current customer base relative to future customers and a comparison with market capitalization reveals the market expectations in terms of future customer growth.

Our model should contribute on linking customer metrics to financial metrics. It shows that such a link is rather easy to accomplish and that marketing models which allow to predict customer equity can also be linked

to shareholder value. Our model should be readily applicable to other financial institutions and firms with contractual relationships so that it might form a sound foundation for valuing marketing and IT investments into the customer base in terms of shareholder value.

### Practical Applications

Managers can use our model to assess how different marketing or IT activities can yield the best future return. It helps visualizing the long-term impact of changes in customer metrics on customer lifetime value, customer equity, and shareholder value rather than the short-term impact on profitability. Investors, financial analysts and acquiring companies can apply the model beyond traditional valuation methods. Our research offers a customer-based model to value firms.

### References

#### Wiesel, T., and Skiera, B.:

"Linking Customer Metric to Shareholder Value for Firms with Contractual Relationships", submitted for Publication, 2005

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