ADVANCES IN PERFORMANCE MANAGEMENT USING CUSTOMER EQUITY

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Keywords

Corporate Performance Management, Customer Equity, Customer Relationship Management, Customer Lifetime Value

Abstract

Forward-looking discounted customer metrics like Customer Lifetime Value and Customer Equity have found their direct relationships to performance management of a company on various levels. This paper examines several of these relations both in theory and in practical analysis of a real-world dataset. Discussed connections range from the obvious marketing management and Customer Relationship Management links, through links to Shareholder value, even into financial reporting and management complements of firm's financial statements.

Practical case study from an online retailer from the Czech Republic demonstrates the usage of Customer Equity within non-contractual business-to-consumer settings. The results reveal important managerial insights when using Customer Equity Statement as a clear form of measuring the value of a customer base.

1. Introduction

Customer Lifetime Value (CLV) is defined as the present value of the future net cash flows associated with a particular customer (Fader, 2014). Customer Equity is the sum of the customer lifetime values across a firm's entire customer base (Fader, 2014). More definitions were broadly researched in (Gupta et al., 2006).

Both concepts of Customer Lifetime Value (CLV) and Customer Equity (CE) originated from marketing science, yet with important relations to management accounting and corporate performance management. The purpose of these concepts is therefore not only for the management of marketing and Customer Relationship Management (CRM) activities, but also for strategic performance management of a company.

Researchers have identified various links of Customer Equity to (1) financial reporting and management accounting, (2) Shareholder Value (SHV), and strategic marketing management and Customer Relationship Management in particular. Part 2 goes into detail with these links. This article focuses on the first link and analyzes Customer Equity Statement as one of the possible managerial outputs.

1.1. Customer Equity vs. Brand Equity

A brief remark on Brand Equity (BE) should be made in the context of CE. Fader (2014) discusses that for concepts like Brand Equity, which considers a brand as an measurable asset, there is far greater backing for the formalization than for CE, yet without doubting the fact of enormous value in a powerhouse brand, Fader is convinced that BE is: “often not quite as important or as valuable to a company’s overall equity as is the last piece of our equity puzzle, customer equity”. Fader also mentions that that finance positions in a company (the CFOs, the accountants, the auditors) are already more comfortable with the ideas behind CE than they are with those ideas behind brand equity. More suitable role of BE instead of CE is for companies in non-contractual settings, companies selling highly specialized offerings, high-end product companies, firms with powerful intermediaries standing between them and their end users, and of course companies that can’t easily obtain customer-level data.

2. Customer Equity as a Performance Metric

(Wiesel, Skiera & Villanueva, 2008) state that Customer Equity: “…contributes to the discussion about marketing accountability and might support marketing’s re-entry into the boardroom because it aligns customer management with corporate goals and the investor’s perspective.” (p. 12).

There are many possible links between forward-looking customer metrics and performance measures for a company management. (Gupta et al., 2006) provide simple framework (to be seen in Figure 1, left) demonstrating relations of marketing management and Customer Relationship Management activities with the value and performance of the whole firm. (Hogan, Lemon & Rust, 2002) proposed a conceptual model of how the firm can employ its stock of physical, intellectual, and customer-based assets to maximize the value of its Customer Equity and achieve above-industry-average profits (Figure 2, right).

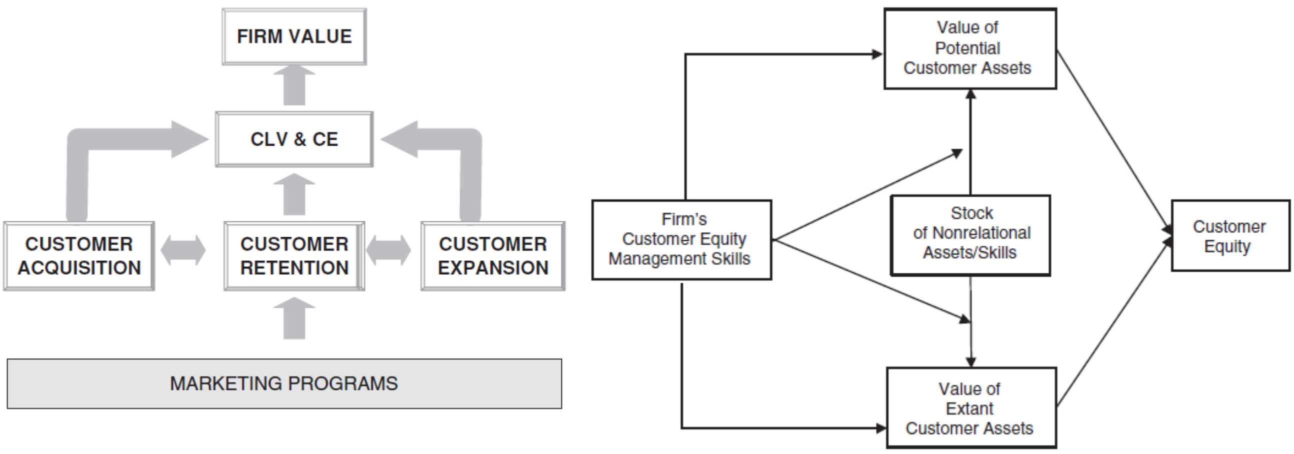

Figure 1 (left). Conceptual framework for modeling CLV. Source: (Gupta et al., 2006). (Right) Conceptual Model of CE Management. Source: (Hogan, Lemon & Rust, 2002).

Researchers have identified various links of Customer Equity to (1) financial reporting and management accounting (Wiesel, Skiera & Villanueva, 2008), (2) Shareholder Value (SHV) (Gupta, Lehmann & Stuart, 2004; Berger et al., 2006; Bauer, Hammerschmidt & Braehler, 2003), and strategic marketing management and Customer Relationship Management in particular (Rust, Lemon & Zeithaml 2004; Berger et al., 2002; Bolton, Lemon, & Verhoef, 2004). Following part of this paper discusses these links further.

2.1. Integral Part of Financial Reporting

(Wiesel, Skiera & Villanueva, 2008) conclude that forward-looking customer metrics are necessary and useful as a managerial tool and thus should also be reported in financial statements to enable investors to understand clearly the firm's capability to generate shareholder value. Customer Equity and other discounted metrics of future value of customer base suit the demands of the "Management Discussion and Analysis" ("MD&A") part of financial statements required in the United States (Securities and Exchange Commission 2003) and the "Management Commentary" (IASB 2005) for complementation of firm's financial statements, and the information should be future oriented, understandable, relevant, reliable, and comparable and should provide an "analysis through the eyes of the management". Current profitability lacks the forward-looking approach. As a result, (Wiesel, Skiera & Villanueva, 2008) proposed several following metrics that would provide valuable information to investors:

1. customer metrics (e.g., customer retention, customer cash flow),
2. the value of the customer base (usually operationalized as customer equity),
3. components of customer equity (e.g., customer equity before marketing expenditures, total lifetime retention expenditures, total lifetime acquisition expenditures),
4. changes in customer equity and components of customer equity over time, and
5. the effects of changes in customer metrics over time.

2.2. Customer Equity Statement

Customer Equity should be reported in a single, clear display that reveals the value of the existing customer base. (Wiesel, Skiera & Villanueva, 2008) took very innovative approach and constructed such clear report from the publicly available information about Netflix, as in Figure 2.

The correctness of this approach was supported by (Gupta, Lehmann & Stuart, 2004) that used publicly available data from five firms to estimate customer equity and the estimates of CE were reasonably close to the market value of three of these firms. Also to mention, the research by Wiesel et al. points out this approximation is fundamentally different for non-contractual relationships where it is hard to determine the number of existing and lost customers at a particular point in time.

For internal purposes, (Rust, Lemon & Zeithaml, 2004) require these models to be more detailed in order to diagnose reasons for particular changes in customer metrics.

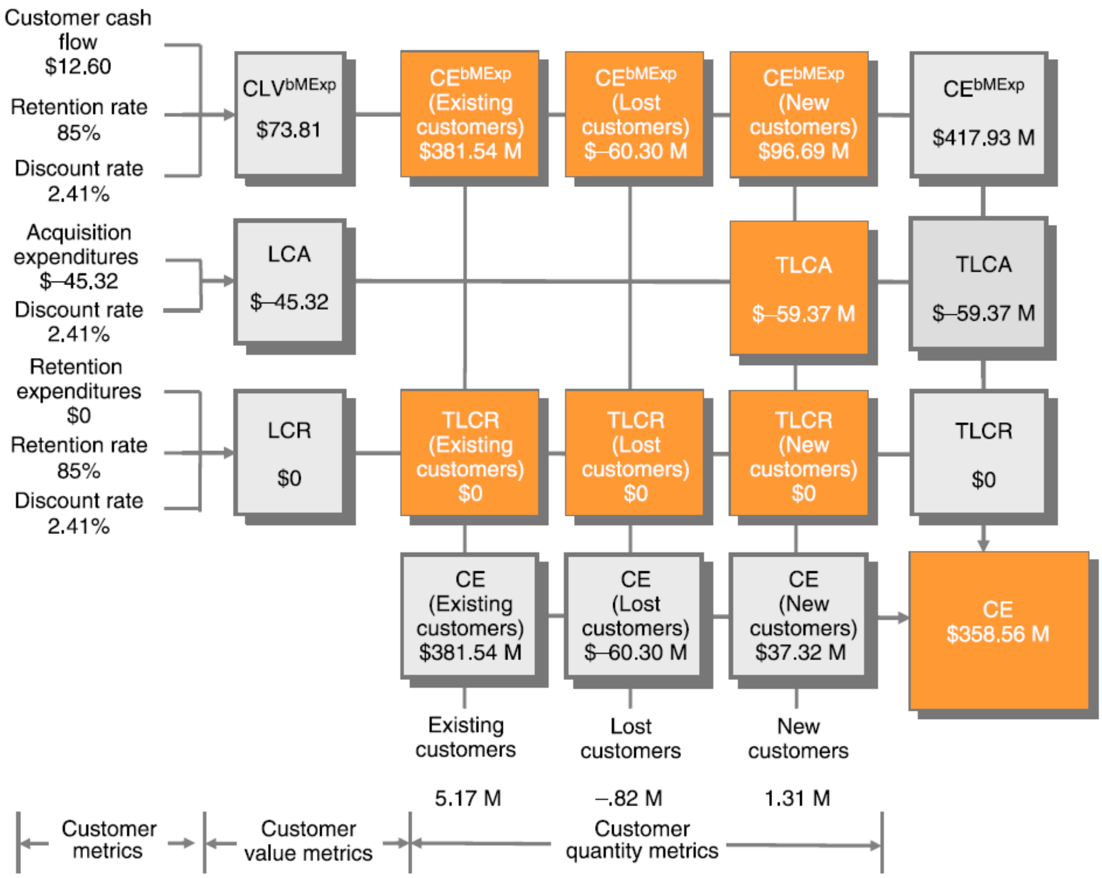

Figure 2. Netflix's Customer Equity Statement (Q3 2006). CE = customer equity, CLV^{bMExp} = customer lifetime value before marketing expenditures, LCA = lifetime acquisition expenditures, LCR = lifetime retention expenditures, TLCA = total lifetime acquisition expenditures, and TLCR = total lifetime retention expenditures. Source: (Wiesel, Skiera & Villanueva, 2008).

2.3. Shareholder Value

(Škodáková, 2009) lists SHV and discounted cash flow metrics as one of the examples of value based management. (Bauer, Hammerschmidt & Braehler, 2003) support such representation of marketing for value creation and see that the more widespread the CLV concept becomes as a controlling tool in the operative sphere, the more easily corporate valuation efforts via CLV can be undertaken. According to Bauer et al., a comprehensive CLV-based corporate valuation is more complex than traditional SHV procedures, and propose a formal synthesis of CLV and SHV concepts in Corporate Value metric, where CE forms the base of such calculation.

2.4. Marketing management and CRM

Research on links between CRM and business performance can be divided into technological aspects of CRM and business aspects. As for technological aspects, findings by (Reinartz, Krafft & Hoyer, 2004) strongly suggest that mere implementation of CRM technology will not lead to the desired effect; it may even have a negative effect. Despite that, the same research indicates that the implementation of CRM processes is associated with better company performance in two of the following three stages: the strongest effect is for relationship maintenance, followed by relationship initiation, yet the effects for relationship termination were either low or not significant. Their research also motivates the use of marketing automation, as at the termination stage, it may be cost efficient to manage low-value relationships with technological support systems. This point is highly relevant in context of CLV and cost-benefit analysis of relations with customers.

A study by (Pechová & Zajarošová, 2014) ranked and analyzed several factors of CRM performance measurement. The most important are factors regarding customer (customer satisfaction, customer value, customer retention, customer equity). The least important factors are infrastructure factors (internal processes).

(Rožek & Karlíček, 2014) concluded their research with finding that CLV approach brings the marketing focus back to the customer and highlights the overall long-term profitability of customers. Customer relationships, similar to other company's assets, require an investment which should produce respective revenues, both happening over multiple accounting periods.

With these foundations, the role of CLV and CE has direct links to CRM performance measurement and marketing management.

2.5. Actionable use of Customer Equity

(Kumar & George, 2007) differentiate between two approaches to measure CE according to data requirements, metrics computed, underlying assumptions and level and type of aggregation, as these yield different methods to maximize the value of customers:

1. in the disaggregate-level approach, customer lifetime value is maximized by implementing customer-level strategies such as optimal resource allocation, purchase sequence analysis and balancing acquisition and retention spending,
2. at the aggregate-level, improving the drivers of customer equity maximizes customer equity.

Customer Equity Statement presented in (Wiesel, Skiera & Villanueva, 2008) also helped with exposing such drivers as lifetime value estimates, acquisition expenditures and retention costs are clearly distinguished and available for management decision making.

3. Customer Equity Implementation for an E-commerce

In this part a practical demonstration of Customer Equity is done on real-world data from one health & beauty online retailer from the Czech Republic. The data provided consist of 48 thousand transactions by 35 thousand identified, yet anonymized, customers within a period of 232 weeks (18 quarters). The business is clearly non-contractual with business-to-consumer relations. The dataset includes purchase data, but no acquisition and retention costs, therefore some of the values had to be estimated according to the business knowledge.

When discussing Customer Equity for e-commerce companies, the approach taken in part 2.2 by (Wiesel, Skiera & Villanueva, 2008) is not suitable as those models are appropriate for contractual settings (e.g. telco, utilities, financial services etc.). For majority of e-commerce companies at business-to-consumer market, more convenient models should be selected. (Kumar & Shah, 2015) warn that customer 'death' is unobserved (and unobservable) in non-contractual settings. Some companies thus exchange retention rate metric for repeat-buying rate or repurchase rate, although the fact that a customer has not made a purchase in a following period does not mean they are 'dead'.

One viable solution uses latent attrition approach (or 'buy till you die' framework) that is also implemented in the statistical computing language R by (Dziurzynski, Wadsworth & McCarthy, 2014) in BTYD package. This framework uses negative binomial distribution model for customer's purchasing behavior and Pareto Type II distribution for the unobserved customer lifetimes. Figure 3 demonstrates such implementation by estimating probability of customers being 'live' at the end of calibration period.

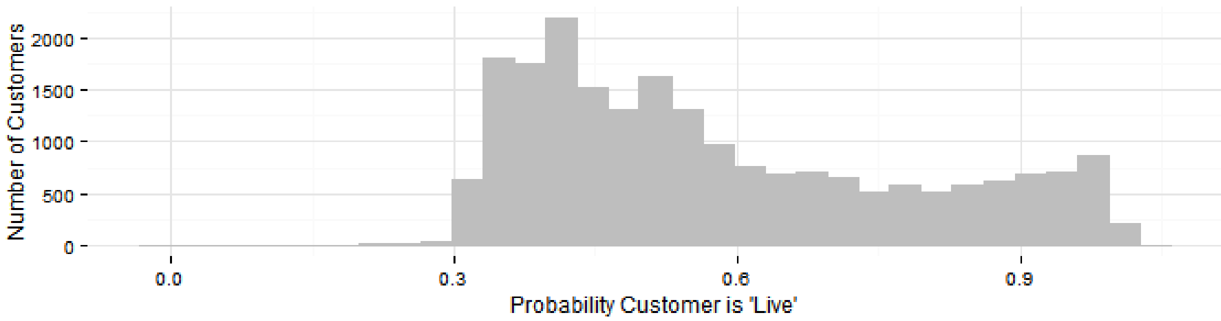

Figure 3. Number of customers by their probability of being live at the end of 2013. Processed on analyzed dataset with R and BTYD package by (Dziurzynski, Wadsworth & McCarthy, 2014). Source: author.

In contradiction to the approach (Gupta, Lehmann & Stuart, 2004), this analysis could be built upon internal data, thus more accurate than using public figures. In a similar way as (Wiesel, Skiera & Villanueva, 2008) on Figure 2, this paper presents Customer Equity Statement for the specific e-commerce dataset in Figure 4.

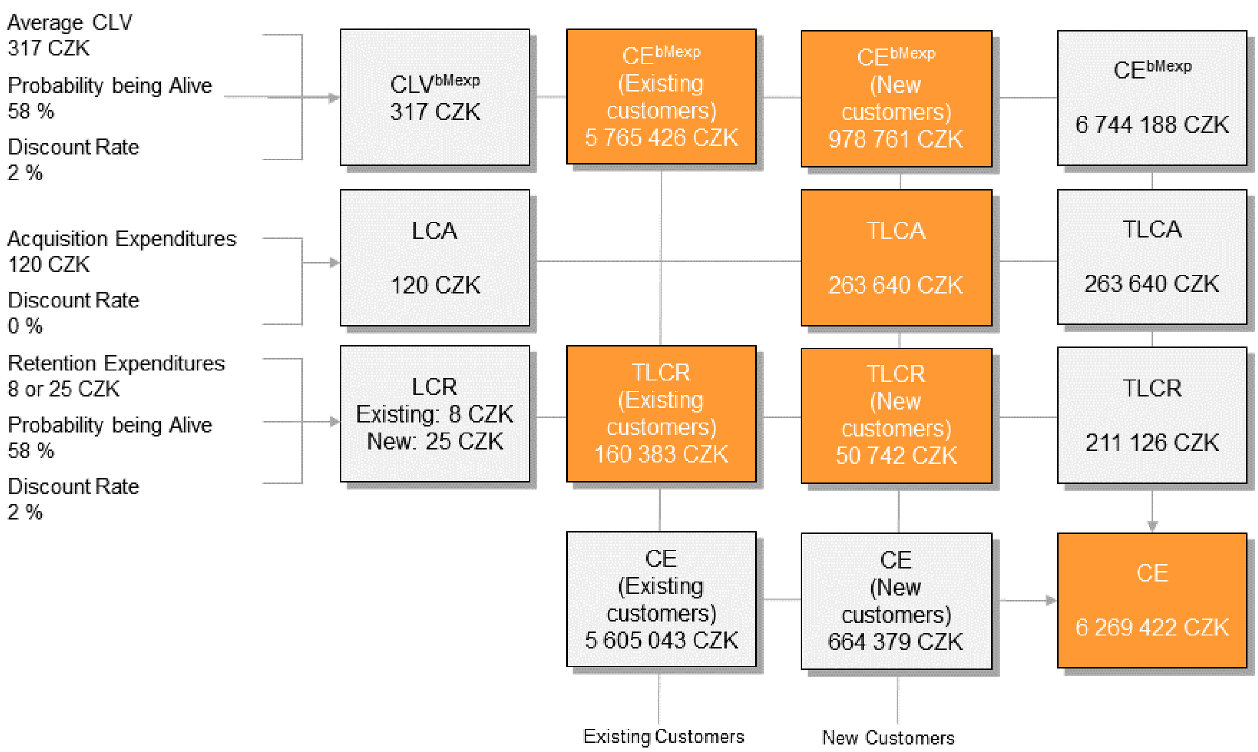

Figure 4. Customer Equity Statement for Q4 2013 data of analyzed dataset of an online retailer. CE = customer equity, CLV^{bMExp} = customer lifetime value before marketing expenditures, LCA = lifetime acquisition

expenditures, LCR = lifetime retention expenditures, TLCA = total lifetime acquisition expenditures, and TLCR = total lifetime retention expenditures. Adapted from (Wiesel, Skiera & Villanueva, 2008). Source: Author.

Expressions in Figure 4 deserve more explanation as several approximations and assumptions were made. Discount rate was set to 2%. CLV was estimated for up to 3 years. Acquisition expenditures were estimated at 120 CZK and held with no discount rate. There were 2 197 new customers in specific quarter. For retention expenditures an estimation of 8 CZK per customer was used to send e-mails to an existing customer for following 3 years (7.5 CZK discounted), and 25 CZK to a new customer for following 4 years (23.1 CZK discounted). There were 21275 customers in the database at the end of 2013. In contrast with Figure 2, lost customers were not included in the schema as non-contractual model already counts with the customer's probability of being alive.

Customer Equity Statement shown in Figure 4 clearly describes current situation as of the end of the fourth quarter of 2013. The average CLV for new customers is 445 CZK i.e. 40% higher than the overall average CLV. Customer Equity for new customers equals to 11% of total CE. There are clear links to high acquisition and retention costs for new customers.

4. Conclusion

This paper reviewed very important links of progressive customer metrics such as Customer Lifetime Value and Customer Equity to performance management of a company on various levels: (1) financial reporting and management accounting, (2) Shareholder Value (SHV), and strategic marketing management and performance measurement of Customer Relationship Management. One of the finest outputs was a Customer Equity Statement that serves as a managerial tool for decision making on all customer acquisition, activation and retention activities on a strategic level.

The factual part of this paper used a dataset from an online retailer and adapted the Customer Equity Statement to non-contractual settings, where customer relationships can't be calculated in such a predictive manner as in contractual settings like in the case of Netflix (Wiesel, Skiera & Villanueva, 2008). For this adaptation a statistical model with Pareto/Negative Binomial Distribution was successfully implemented.

Further research should elaborate on the problems faced while using Customer Equity in non-contractual settings: (1) lack of pure retention metrics, (2) absence of some key financial data regarding marketing activities, (3) tests on assumptions stated by used statistical models.

Acknowledgements

This paper was processed with contribution of long term institutional support of research activities by Faculty of Informatics and Statistics, University of Economics, Prague and supported by the IGA grant F4/18/2014.

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